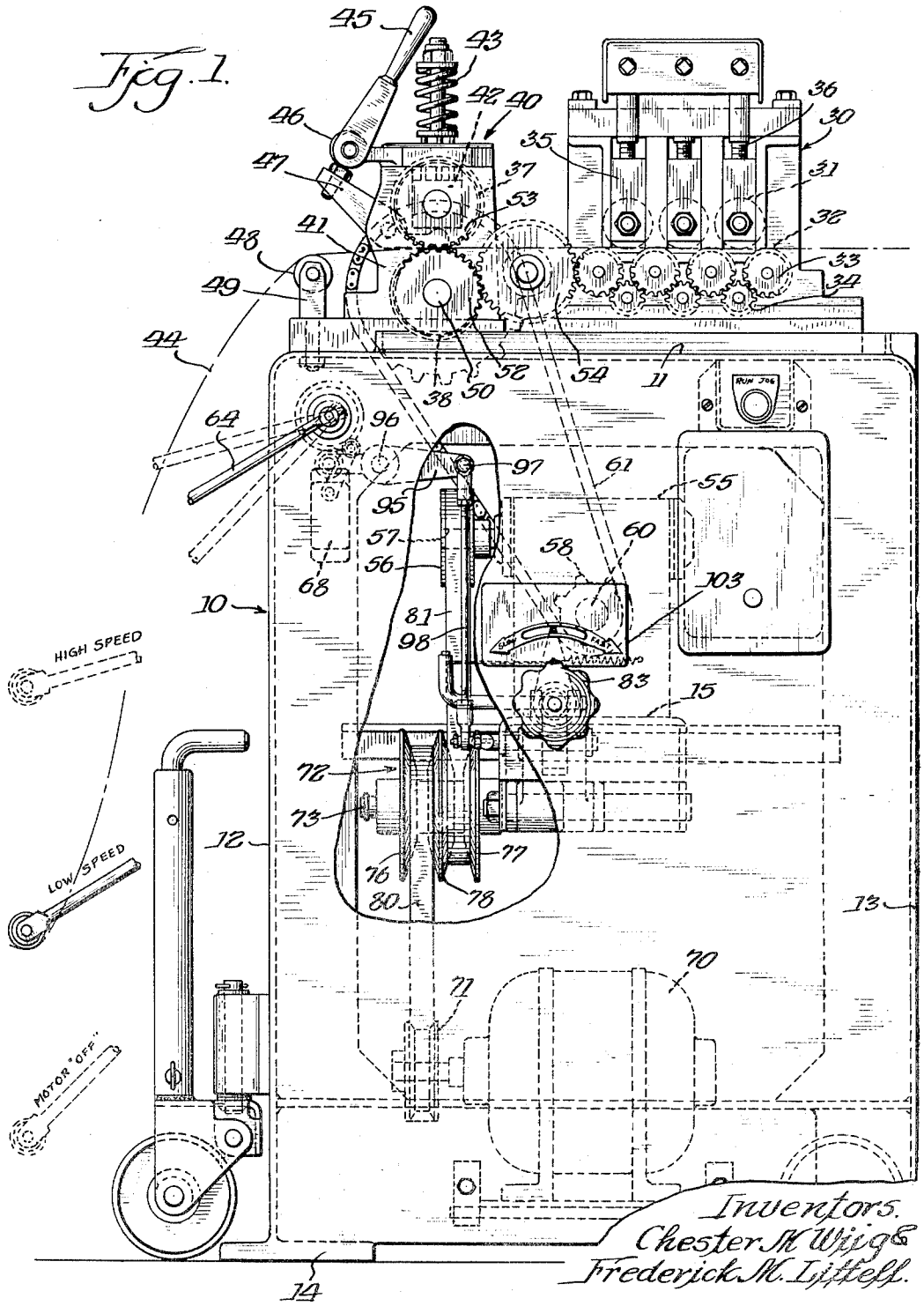
July 3, 1956 C. M. WIIG ET AL 2,753,183

MECHANICAL SPEED VARIATOR FOR CONTINUOUS STRIP FEEDING

Filed Jan. 29, 1953 4 Sheets-Sheet 1

Fig. 1.



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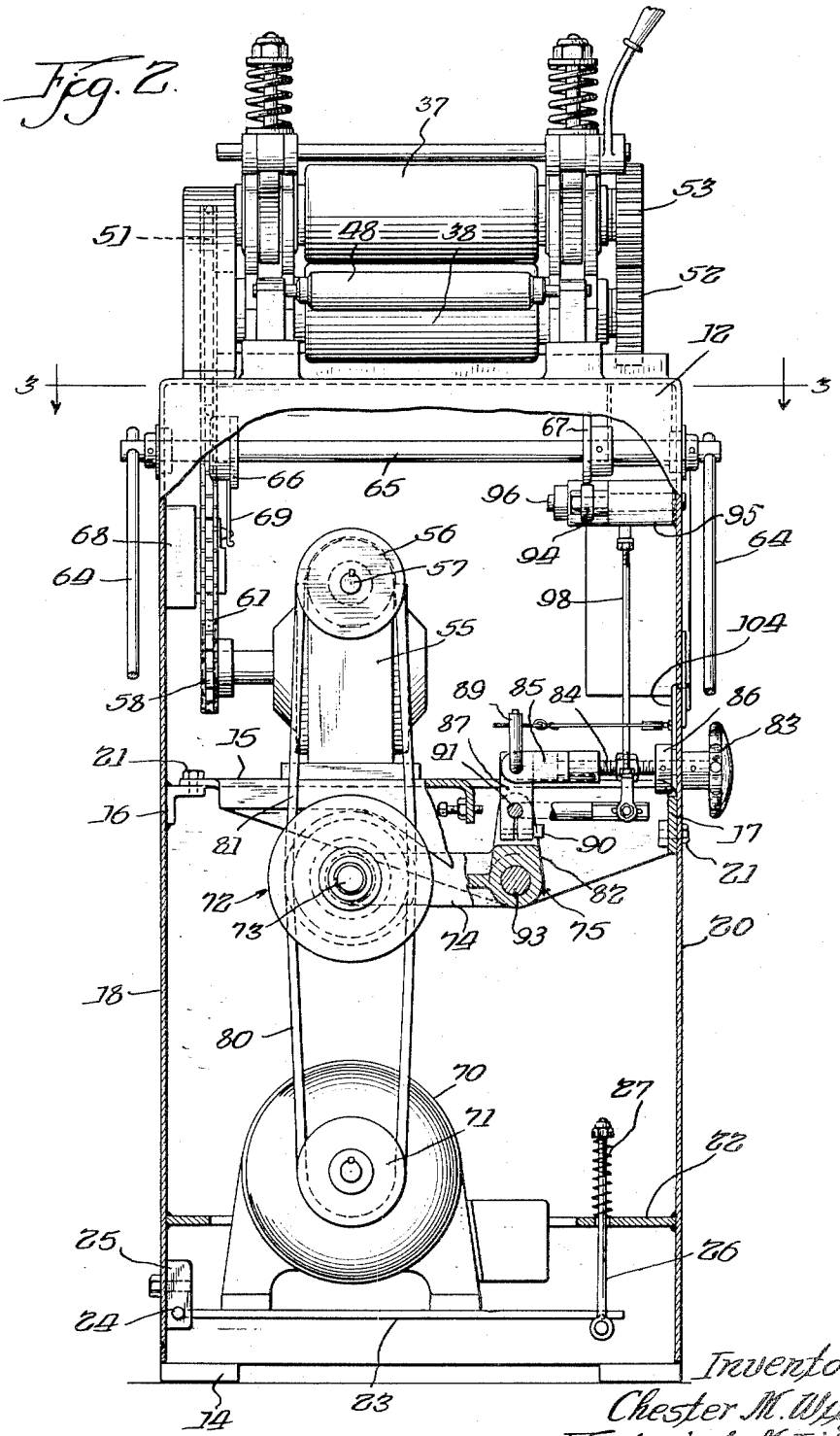
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MECHANICAL SPEED VARIATOR FOR CONTINUOUS STRIP FEEDING

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Fig. 2.



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MECHANICAL SPEED VARIATOR FOR CONTINUOUS STRIP FEEDING

Filed Jan. 29, 1953 4 Sheets-Sheet 3

Fig. 3.

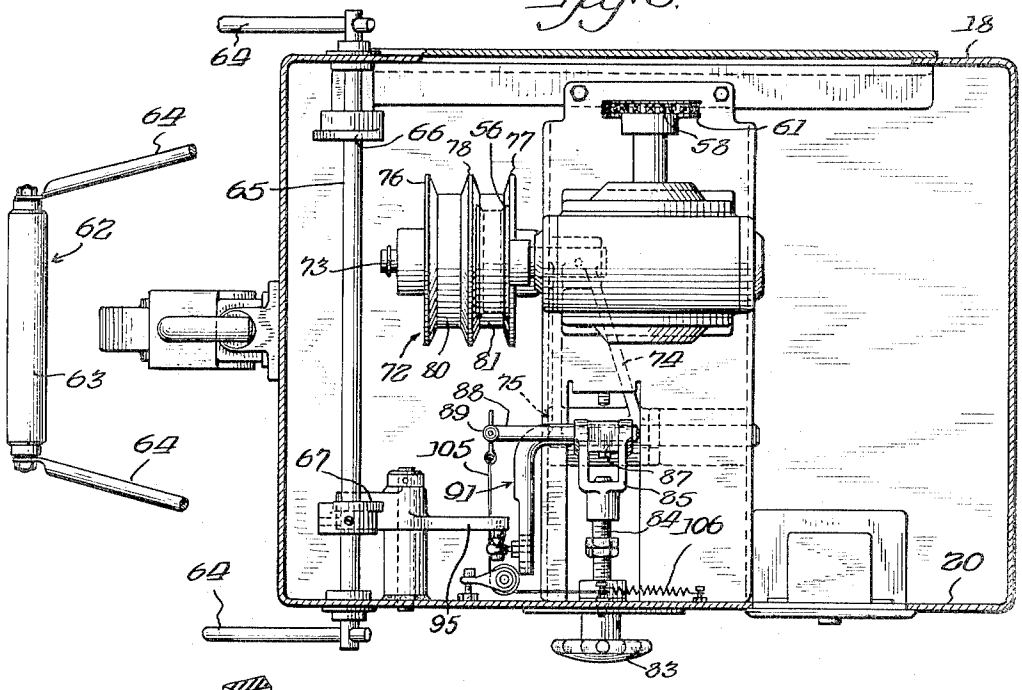
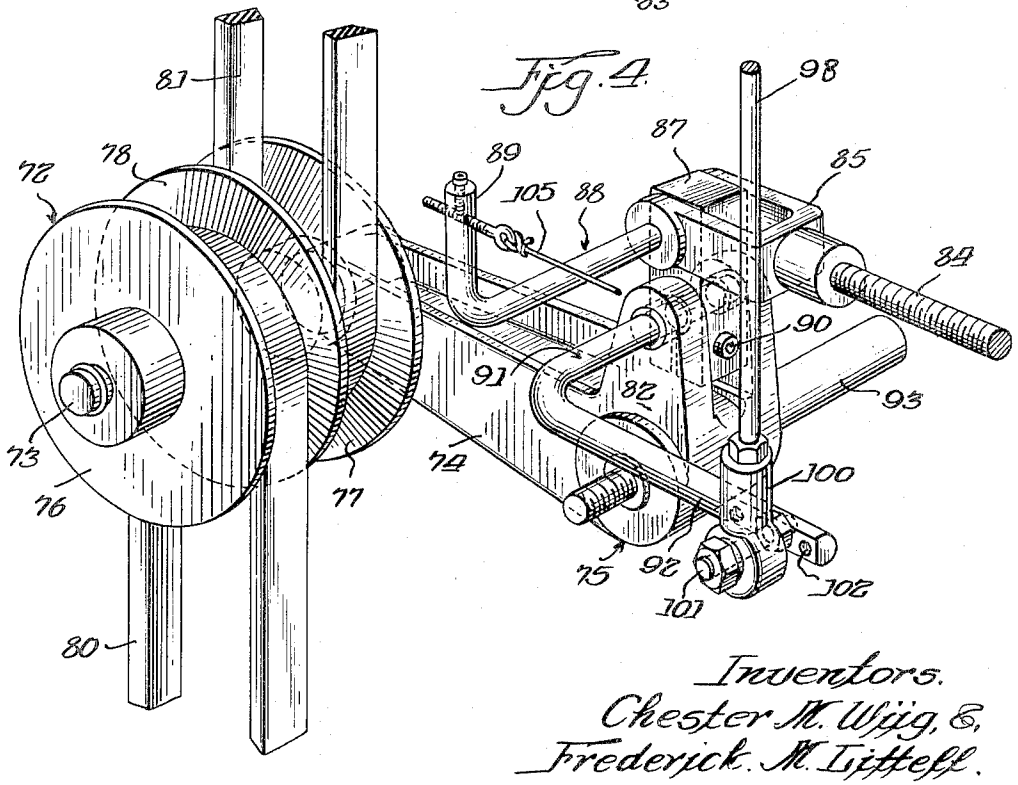


Fig. 4.



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MECHANICAL SPEED VARIATOR FOR CONTINUOUS STRIP FEEDING

Filed Jan. 29, 1953 4 Sheets-Sheet 4

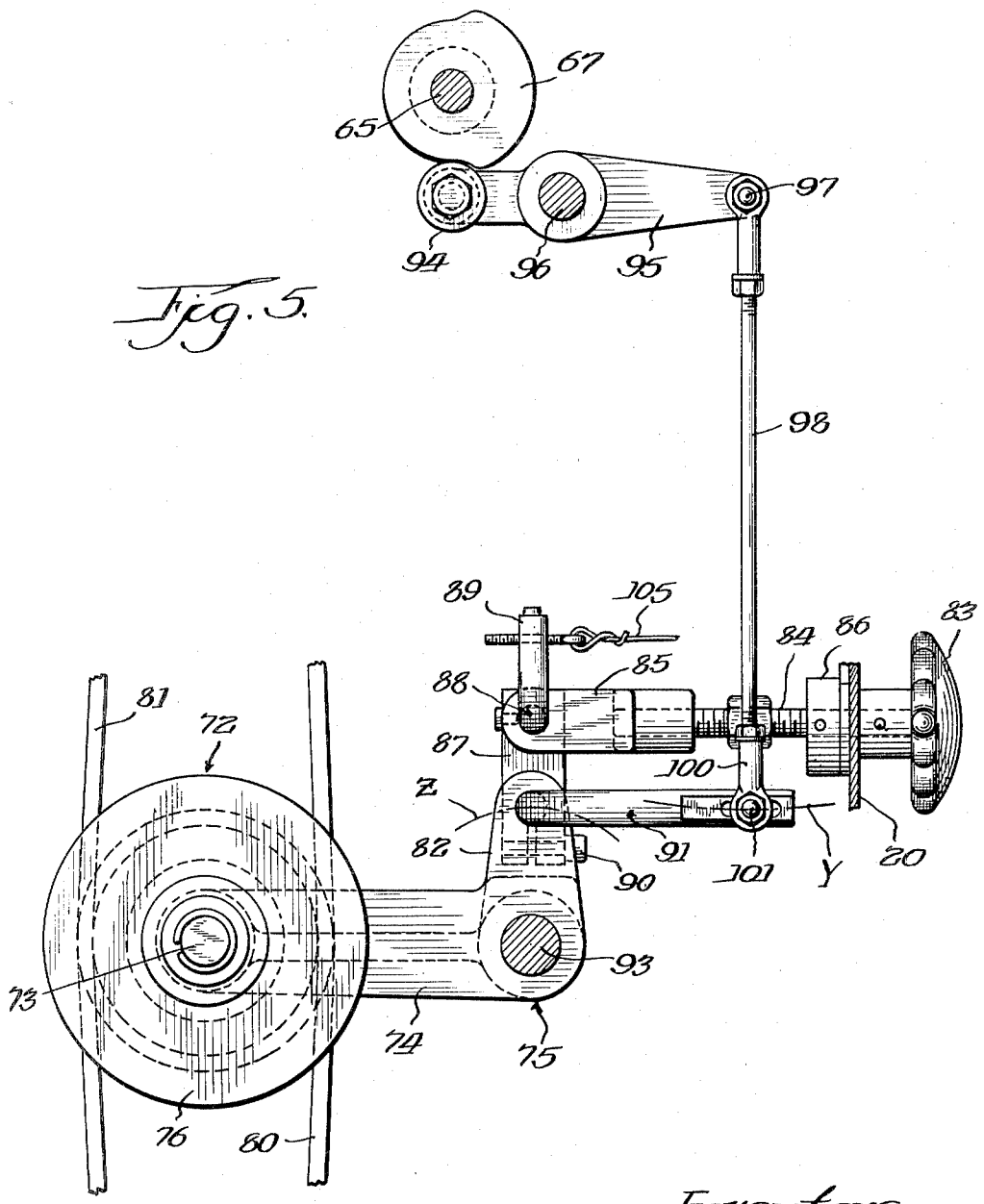


Fig. 5.

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United States Patent Office

2,753,183

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MECHANICAL SPEED VARIATOR FOR CONTINUOUS STRIP FEEDING

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Application January 29, 1953, Serial No. 334,056

8 Claims. (Cl. 271—2.3)

The invention relates to feeding mechanism for metal strip material and has reference in particular to a continuous straightening and feeding machine for metal strip material having automatic speed variating mechanism incorporated therein.

Metal working machines such as punch presses and the like are supplied with metal stock in strip form and which is unwound from a coil, conditioned by a straightening machine and fed to the press for blanking, punching or similar operations. The straightening and feeding machine is located some distance to the rear of the press and since the feed rollers on the press operate intermittently, whereas the straightening and feeding rolls rotate continuously, it is necessary to allow a loop of metal stock to form between the two units. The size of the loop must be controlled and it is desired that the size be maintained substantially constant during operation. Accordingly, the straightening and feeding rolls must be rotated at a speed having a definite relation to the speed of the press.

Reels for feeding coil stock have been equipped with control arms having contact with the loop and which control the rotation of the reel through switch means or clutch mechanism to thus maintain the loop substantially constant in size for the particular operating speed of the press associated therewith. In machines of this character the switch or clutch and also the electric motor are subjected to excessive wear since variations in the size of the loop results in constant actuation of the parts between "on" and "off" positions. Also straightening and feeding machines have been manufactured with speed variating means capable of manual adjustment so that a particular speed for the feed rolls can be selected and which will correspond substantially to the speed of the press. Theoretically the loop of metal stock is thus maintained at a constant size during operation but in actual practice this theoretical condition is only approximated. In addition it is necessary for an operator to be in constant attendance in order to reset the manual adjustment means so as to prevent the loop from increasing or decreasing. Accordingly, it is an object of the present invention to incorporate in such machines automatic mechanism adapted to be controlled by a loop control arm and which will produce variations in speed up to approximately ten per cent above or below any particular manual setting.

Another object of the invention resides in the provision of speed variating means for straightening and feeding machines which will provide a hand wheel conveniently accessible to the operator so that a particular speed can be selected for the feed rolls, and wherein said machine will additionally incorporate automatic mechanism for operation in response to the movement of a loop control arm for varying the selected speed to a maximum of approximately ten per cent above or below the said manually set speed.

Another object of the invention is to provide speed variating means of simple construction, which will be sensitive and efficient in operation and which will provide for manual selection of a particular speed within the range of the machine in addition to providing for automatic variations in said speed up to a predetermined limit above or below the same, and wherein said mechanism for automatically varying the speed will operate without disturbing the setting of said manual adjustment means.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation, as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings which illustrate an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a side elevational view of a straightening and feeding machine incorporating the improved manually adjustable and automatic speed variating means of the invention;

Figure 2 is a front elevational view of the machine of Figure 1, parts being shown in section to better illustrate the speed variating mechanism;

Figure 3 is a sectional view taken substantially along line 3—3 of Figure 2;

Figure 4 is a perspective view showing the speed variating means of the invention in a position approximately half way between the extremes of fast and slow; and

Figure 5 is a fragmentary side elevational view of the speed variating means with the loop control arm cam and its associated roller having been displaced 90 degrees to better illustrate the operation of the several parts.

Referring in particular to Figure 1 of the drawings, the invention is illustrated as applied to a straightening and feeding machine adapted to receive metal strip material from a coil and feed the same to a punch press or similar machine adapted to operate on the strip material. The several parts going to make up the straightening and feeding mechanism are supported by a metal cabinet or housing structure such as indicated by numeral 10 and which includes a top wall 11, front and rear walls 12 and 13, and a base member such as 14. An intermediate partition is located within cabinet 10, as best shown in Figure 2, the same being generally designated by numeral 15 and providing a support for the speed reducing unit to be presently described. Brackets such as 16 and 17 are suitably secured to the side walls 18 and 20, respectively, and the intermediate partition 15 is supported by said brackets, being secured thereto by screws 21. A bottom partition such as 22 is suitably welded to the side walls 18 and 20 at a point some distance above base 14. The motor support 23 is pivoted at 24 to the bracket 25, secured to side wall 18, and the free end of the support is engaged by rod 26 which extends through partition 22 and mounts the coil spring 27 whereby the free end of the motor support 23 is resiliently mounted.

The straightening unit, indicated in its entirety by numeral 30, is supported on surface 11 adjacent the rear of the unit and essentially consists of the upper feed rolls such as 31 and lower feed rolls 32, the latter being geared, so that they rotate in unison, by the gear wheels 33 and the idler pinions 34. The upper rolls 21 of the straightening unit are each located centrally above a pair of lower rolls and in order to accomplish a straightening function the upper rolls are adjustably mounted, being journalled by the blocks 35 adapted to be moved vertically by rotation of the threaded studs 36. The material in passing through the straightening unit is bent in a direction opposite to the curvature assumed by the metal strip when in coil form. From the straightening unit the metal strip passes through feeding rolls 37 and 38 provided by the feeding unit, generally indicated by numeral 40, and also mounted on top wall 11 adjacent the front of the machine. The lower feeding roll 38 is suit-

ably journalled by the side supports 41 provided by the feeding unit, whereas the upper feeding roll 37 is journalled by blocks 42 mounted in supports 41 for vertical movement toward and from the lower feed roll. The coil springs 43 are provided for tensioning the upper feed roll by maintaining resilient pressure on the bearing blocks 42 to force the upper roll into pressure contact with the lower roll 38. It is necessary at times to initially insert the metal strip, such as indicated by the broken line 44, Figure 1, between the feed rolls, for which purpose the feeding unit 40 is provided with a hand lever 45, with the cams 46 adapted to be rotated by said lever, and with the lifter levers 47. When the lifter levers 47 are cammed in a downward direction the bearing blocks 42 are elevated whereby to separate the top roll 37 from the lower roll 38. The strip material upon leaving the feed rolls passes over an idler roll 48 supported by the standards 49.

The shaft 50 of the lower roll 38 is provided with the sprocket wheel 51 which is secured to said shaft on the left hand side thereof, Figure 2, and is also provided with the gear wheel 52 fixed to the shaft on the right hand side thereof. The gear 53 meshes with 52 and the upper feed roll 37 is accordingly driven from said lower roll. The connecting gear 54 completes the drive from the feeding unit to the straightening unit so that all the rolls are driven simultaneously. As previously explained, the partition 15 provides a support for the gear reducing unit 55 which is conventional in construction and in mode of operation, having a pulley 56 fixed to the power input shaft 57 and having a pinion 58 fixed to the power output shaft 60. The endless chain 61 passes over sprocket wheel 51 and sprocket pinion 58, thereby operatively connecting the speed reducing unit with the feeding unit and comprising part of the driving connections for said feeding unit.

It has been explained that the strip material 44 provides a loop between the straightening and feeding machine and the punch presses with which the same may be associated. The straightening and feeding machine as shown in the drawings is accordingly provided with a loop control arm generally designated by numeral 62 and including the roller 63 adapted to contact the loop of strip material, the said roller being supported by the loop and thus being elevated or lowered as said loop may vary in size. A pair of arms such as 64 are provided for the roller 63 and said arms are fixed at their upper ends to the cam shaft 65, extending between the side frames 18 and 20 and being journalled thereby. As the loop may vary in size the loop control arm 62 is oscillated to oscillate the cam shaft 65 to which is fixed a switch control cam 66 and the control cam 67 for controlling the automatic variating mechanism to be presently described in detail. Cam 66 is located adjacent side wall 18. The electric switch 68, suitably positioned on side wall 18 within the cabinet, is provided with the switch lever 69 adapted to contact cam 66 and receive actuation therefrom as the cam 66 is oscillated. Said electric switch 68 is so calibrated that the electric circuit to driving motor 70 is closed for all positions of the loop control arm except the extreme low positions as diagrammatically illustrated in Figure 1, in which positions of the loop control arm the switch 68 is actuated to disconnect electric motor 70 from its source of power. Said motor operates at a constant speed and driving connections are provided between the motor and speed reducing unit which will now be described.

The said driving connections extend between the pulleys 71 and 56 and the same include a speed variating pulley unit 72 mounted for rotation on shaft 73 which is fixed to leg 74 of the pivot arm 75. The speed variating unit 72 consists of an outer pulley disc 76, an inner pulley disc 77, and a central double cone pulley disc 78 mounted for free rotation and having slidable movement on the trunnion of the pulley discs 76 and 77. The endless belt 80 operatively connects motor pulley 71 with the pulley unit 72 through the pulley discs 76 and 78. The endless belt 81 operatively connects pulley 56 of the speed reducing unit with the pulley unit through the discs 77 and 78. As the speed variating unit 72 is moved vertically, that is, in a direction substantially parallel to the path of the driving connections, the driving speed to the reducing mechanism 55 is varied. For example, when the pulley unit 72 is moved downwardly belt 80 moves toward the outer periphery of its pulley discs 76 and 78, whereas belt 81 is correspondingly moved inwardly toward the inner periphery of the pulley discs 77 and 78. The effect is to decrease the driving speed of the speed reducing mechanism 55. When the pulley unit 72 is bodily moved in an upward direction the belt 80 is caused to move toward the inner periphery of the pulley discs 76 and 78, whereas belt 81 moves toward the outer periphery of the pulley discs 77 and 78. The result is to increase the speed at which the speed reducing mechanism 55 is driven.

The invention provides manually adjustable means for adjusting the position of pulley unit 72, the said means performing its function through operative connection with leg 82 of the pivot arm 75. Said manually adjustable means includes the knob 83 located in convenient position for actuation by the operator. The knob 83 is fixed to a threaded adjusting screw 84 which has its threaded end in threaded engagement with the clevis 85. The collar 86 is fixed to screw 84 adjacent the inside of side wall 20 and since knob 83 is located on the exterior side of said wall, the adjusting screw is rotatably mounted and held against longitudinal movement, although the structure has freedom to move to a limited extent, which is required for the proper operation of the automatic speed varying mechanism of the invention. The pivot end of the clevis 85 is connected to the block 87 by means of the clevis pin 88 having an upstanding arm portion 89. The clevis pin 88 is fixed to the clevis 85 by means of a set screw or the like so that the parts function as a unit with the upstanding arm 89 being disposed approximately vertically when the mechanism is positioned as shown in Figure 4. The block 87 is accordingly free to pivot on the clevis pin and in a similar manner the clevis 85 is free to pivot with respect to the block. The lower end of the block 87 is positioned within the bifurcated leg portions 82 of the pivot arm 75. Said end of the block is also bifurcated, with a set screw 90 being provided for locking the said bifurcated lower end of block 87 to a link pin 91, said pin having a right angled leg portion 92. The link pin is rotatably mounted by the bifurcated legs 82 of the pivot arm 75 and said link pin functions to connect clevis 85 to the pivot arm through block 87. Whereas, the clevis pin 88 has a fixed relation with the clevis it will be seen that the link pin 91 has a fixed relation with block 87. The pivot shaft 93 extends through an opening in the hub of the pivot arm 75 and through openings in the depending side portions of the partition 15 which journal the shaft 93 and thus pivotally support the pivot arm 75 for oscillating movement.

The manually adjustable mechanism for adjusting the position of the pulley unit 72, whereby to select a particular speed of rotation for the feed rolls 37 and 38, is combined with automatic mechanism under control of the loop control arm 62 which operates automatically to vary the adjusted position of the pulley unit 72 whereby to vary the selected speed of the feed rolls up to a maximum of approximately ten per cent in either an increasing or decreasing direction. The control cam 67 is provided with a low and high portion and with a sloping connecting portion, which sloping portion is positioned for contact with roller 94 when the loop control arm 63 is positioned approximately midway between high and low speed positions such as shown in Figure 1. The roller 94 is carried by one end of lever 95 suitably supported

for pivotal movement by stud **96**, supported by side wall **20**. The opposite end of lever **95** is pivotally connected at **97** to the connecting rod **98** which depends vertically downward for connection with leg **92** of the link pin **91**. Said connection of the parts is provided by hub portion **100** and securing bolt **101**. For adjustment purposes, leg **92** of the link pin is provided with a plurality of openings **102** and the bolt **101** can be threaded into any one of these openings for connecting the rod **98** to the link pin. The indicia plate **103** is fixed to wall **20** exteriorly thereof adjacent knob **83** and said indicia plate is provided with a slot on the respective sides of which appear the words "Slow" and "Fast." A pointer **104**, located adjacent the interior surface of side wall **20** is suitably supported for oscillating movement by adjusting screw **84** and by means of the cable **105** said pointer is operatively connected to the upstanding portion **89** of clevis pin **88**. The pointer is tensioned by the coil spring **106** which maintains the cable **105** in taut condition.

To set the speed variating pulley **72** for a particular speed the knob **83** is rotated to cause extension or retraction of clevis **85**. Since the link pin **91** is held by the connecting rod **98** against turning the extending movement or the retracting movement of the clevis **85** is imparted to the leg portions **82** of the pivot arm **75** whereby to cause movement of leg portion **74** in either a down or an up direction. For example, if the knob **83** is rotated clockwise, Figure 1, the clevis **85** will be retracted. This action of the clevis is imparted to the stationary block **87** through said block to the leg portions **82** of the pivot arm **75**. As a result the leg portion **74** is caused to move upwardly and the pulley unit **72** is thus positioned to drive the reducing mechanism **55** at an increased speed.

Assuming that the speed thus selected for the feed rolls substantially conforms to the speed of the press associated with the feeding machine, the loop of strip material **44** should assume a size such as to maintain the loop control arm approximately half way between the high and low speed positions. It is difficult to approximate the exact speed of the press and, in any event, the speed of the press often varies so that the loop will increase or decrease in size. When this takes place the resulting movement of the loop control arm **62** will oscillate the cam shaft **65** and thus the control cam **67**. Action of the cam will rock the arm **95** and such motion will accordingly be transmitted to leg portions **82** as lateral movement, thus producing oscillation of the pivot arm **75** and movement of leg portion **74** in either an up or a down direction. This variation in the position of the pulley unit is limited by the contour of the control cam **67** since it is only necessary to vary the speed of the feed rolls up to a maximum of approximately ten per cent above or below the particular set speed. Oscillating movement of the link pin **91** rocks the block **87** about an axis provided by the clevis pin **88**. The leg portions **82** of the arm are thus given similar rocking motion which effects movement of the leg portion **74** as described. The block **87** and associated structure have operation substantially similar to a toggle since when the link pin **91** is oscillated the pivot shafts **88** and **93** are fixed. The toggle thus breaks in the middle to effect the desired oscillation of pivot arm **75**. When the manually adjustable knob **83** is actuated the motion is transmitted through the block **87** which is held stationary by link pin **91** and said block in effect acts as an extension of the leg portion **82**.

The elements of the present variating means have a somewhat different mode of operation when adjusted manually by rotation of the knob **83** than they do when actuated automatically by the loop control arm **62**. Manual adjustment by rotation of knob **83** will effect substantially horizontal movement of the clevis **85**, block **87** and link pin **91** either to the right or to the left as the case may be, depending on the direction of rotation of the knob. Such movement of the parts necessarily takes place since the connecting rod **98** has pivotal connection with link pin **91**. The other end of the rod is pivoted at **97** and swinging movement of the rod together with lateral movement of link pin **91** will take place substantially on arc *y* as shown in Figure 5. Accordingly, the clevis **85**, block **87** and said link pin **91** will move horizontally either to the right or to the left and the effect of the action is to rock the pivot arm **75** and thus elevate or lower the variating pulley **72**.

When the connecting rod **98** is moved up or down, due to rotation of the loop control arm cam **67**, the action causes oscillation of pin **91** and a rocking of block **87** about the clevis pin **88** as an axis. The block **87** and leg portions **82** function in a manner similar to the elements of a toggle with the center pivot formed by link **91** moving along the arc *z* as shown in Figure 5. Thus, again the action is such as to rock the pivot arm **75** to effect raising or lowering of the variating pulley **72**.

The pivot shaft **93** of the toggle is definitely fixed in position. However, the clevis pin **88** may move bodily up or down to permit a braking of the toggle as described since the adjusting screw **84** is loosely mounted in the side wall **20** for the purpose. The loose mounting of adjusting screw **84** also facilitates operation of the automatic mechanism. Accordingly, for any particular adjusted position of pulley unit **72**, the automatic mechanism will operate to vary said position of the pulley unit in either an up or a down direction so that the speed of the feed rolls will very automatically within a predetermined range above or below set speed.

The invention is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings as various forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

What is claimed is:

1. In a feeding machine for feeding metal strip material, the combination with feed rolls and power means for driving the feed rolls, driving connections between the power means and the feed rolls including a speed variating pulley unit and belts connecting the pulley unit with the power means and the feed rolls respectively, a pivoted arm member supporting the pulley unit for bodily movement in directions substantially parallel to the path of the driving connections whereby to effect a change in the speed of the feed rolls, manually adjustable means for effecting movement of the pivoted arm for adjusting the position of the pulley unit to select a particular speed for the feed rolls, a loop control arm adapted to have oscillating movement, and other means actuated by movement of the loop control arm for varying the position of the pulley unit in accordance with the movement of said control arm, said other means operating independently of the adjustment of said manually adjustable means.

2. In a feeding machine for feeding metal strip material, the combination with feed rolls and power means for driving the feed rolls, driving connections between the power means and the feed rolls including a speed variating unit and belts connecting the pulley unit with the power means and the feed rolls respectively, a pivoted arm member having a long leg and a short leg in right angled relation thereto, said long leg of the pivoted arm member supporting the speed variating unit for bodily movement in directions substantially parallel to the path of the driving connections, whereby to effect a change in the speed of the feed rolls, manually adjustable means for effecting movement of the pivoted arm member to select a particular speed for the feed rolls, said manually adjustable means including a clevis, a block pivoted thereto, and a link pin for joining the block to the short leg of the pivoted arm member, said block being fixed to the link pin and the link pin being journalled for rotation by said short leg.

3. In a feeding machine for feeding metal strip material, the combination with feed rolls and power means for driving the feed rolls, driving connections between the power means and the feed rolls including a speed variating pulley unit, a pivoted arm member having a long leg and a short leg in right angled relation thereto, the long leg of the pivoted arm member supporting the pulley unit for bodily movement in directions substantially parallel to the path of the driving connections, means for effecting movement of the pivoted arm member to thus position the pulley unit for a particular speed of the feed rolls, said means including a clevis adapted to be moved in a longitudinal direction by rotation of an adjusting screw, a block pivoted to said clevis and a link pin joining the block to the short leg of the pivot arm, said block being fixed to the link pin and the link pin being journalled for rotation by said short leg, a loop control arm, other means for automatically varying the position of the pulley unit in accordance with movement of the loop control arm, said other means including a pivoted lever adapted to be oscillated by the loop control arm, and a connecting rod connecting the lever with the link pin.

4. In a feeding machine for feeding metal strip material, the combination with feed rolls, of an electric motor for driving the feed rolls, speed variating means interposed in the drive from the motor to the feed rolls, said means including a pulley unit, a pivoted arm member having a long leg and a short leg, said long leg supporting the pulley unit for bodily movement to effect variations in the speed of the feed rolls, a link pin journalled by the short leg, a member fixed at one end thereof to the link pin, a clevis pivotally connected to the other end of the member, manually actuated means for effecting movement of the clevis for imparting similar movement through the member to the pivoted arm whereby to selectively position the pulley unit for a particular speed of the feed rolls, a loop control arm adapted to have movement, and connections from the loop control arm to the link pin for oscillating the link pin in accordance with movement of the loop control arm, whereby similar oscillating movement is imparted to the pivot arm for automatically varying the position of the pulley unit to increase or decrease the speed of the feed rolls with respect to said particular speed.

5. In a feeding machine for feeding metal strip material, the combination with feed rolls, of an electric motor for driving the feed rolls, speed variating means interposed in the drive from the motor to the feed rolls, said means including a bodily movable pulley unit which for any particular position thereof effects a particular speed of the feed rolls, a pivoted arm member having a long leg and a short leg at right angles thereto, means fixed to the end of the long leg for mounting the pulley unit for rotation, other means connecting with the short leg for oscillating the pivot arm to thus adjust the position of the pulley unit, said other means including a link pin journalled by the short leg, a member fixed at one end thereof to the link pin, a clevis pivotally connected to the other end of the member, and manually operable means for effecting movement of the clevis and member for oscillating the pivot arm, a loop control arm adapted to have movement, and connections from the loop control arm to the link pin for oscillating the link pin in accordance with movement of the said arm, whereby similar oscillating movement is imparted to the pivot arm for automatically adjusting the position of the pulley unit to increase or decrease the speed of the feed rolls.

6. In a feeding machine for feeding metal strip material, the combination with feed rolls, of an electric motor for driving the feed rolls, speed variating means interposed in the drive from the motor to the feed rolls, said means including a bodily movable pulley unit which for any particular position thereof effects a particular speed of the feed rolls, a pivoted arm member having a long leg and a short leg at right angles thereto, means fixed to the end of the long leg for mounting the pulley unit for rotation, other means connecting with the short leg for oscillating the pivot arm to thus adjust the position of the pulley unit, said other means including a manually operable adjusting screw, a clevis threaded to one end of the screw and which is extended or retracted on the screw by rotation of said screw, and a toggle member connecting the clevis with the short leg of the pivot arm, a loop control arm adapted to have movement, and connections from the loop control arm to the toggle member and short leg of the pivot arm for oscillating the pivot arm in accordance with movement of said loop control arm.

7. In a feeding machine for feeding metal strip material, the combination with feed rolls, of an electric motor for driving the feed rolls, speed variating means interposed in the drive from the motor to the feed rolls, said means including a bodily movable pulley unit which for any particular position thereof effects a particular speed of the feed rolls, a pivoted arm member having a first leg and a second leg at right angles thereto, means fixed to the end of the first leg for mounting the pulley unit for rotation, manually operable means connecting with the second leg for oscillating the pivot arm to thus select a certain position of the pulley unit for a particular speed, and other means also connecting with the second leg for varying the position of the pivot arm and thus the position of the pulley unit with respect to the position selected by the manually operable means, said other means being operated automatically by the metal strip material fed by the machine and said other means operating in a manner which does not disturb the setting of the manually operable means.

8. In a feeding machine for feeding strip material, the combination with feed rolls and power means for driving the feed rolls, driving connections between the power means and the feed rolls including a speed variating pulley unit and belts connecting the pulley unit with the power means and with the feed rolls respectively, a pivoted arm member supporting the pulley unit for bodily movement in an arc approximately parallel to the path of the driving connections, whereby to effect a change in the speed of the feed rolls, a handle member adapted to be manually actuated, means articulatedly connecting the handle member with the said pivoted arm member for oscillating the arm member to thereby manually adjust the position of the pulley unit and select a particular speed for the feed rolls, and other means adapted to be automatically actuated and having operative connection with the pivoted arm member through the articulated connecting means for varying the position of the pulley unit with respect to any manually adjusted position selected by the handle member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,916,467	Eger	July 4, 1933
2,029,854	Cannity	Feb. 4, 1936
2,227,387	Barton	Dec. 31, 1940
2,427,943	Butterworth	Sept. 23, 1947
2,637,991	Cohn et al.	May 12, 1953