Aug. 7, 1934. H. E. EDWARDS 1,968,881

LABEL AFFIXING MACHINE

Filed June 9, 1930 4 Sheets-Sheet 1

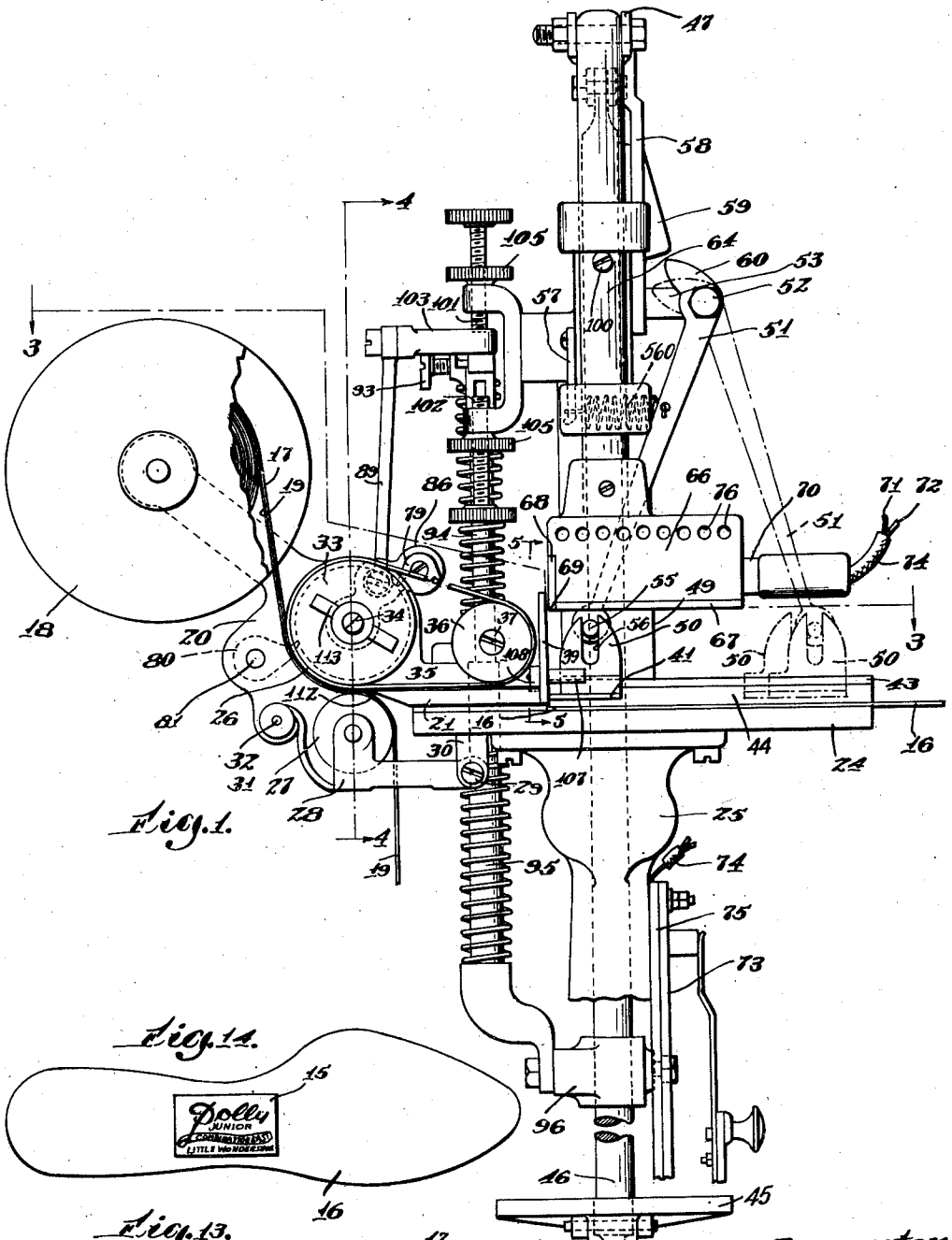
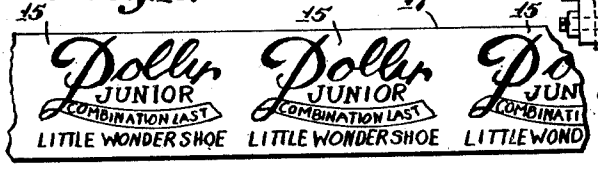


Fig. 1.

Fig. 1a.

Fig. 1b.

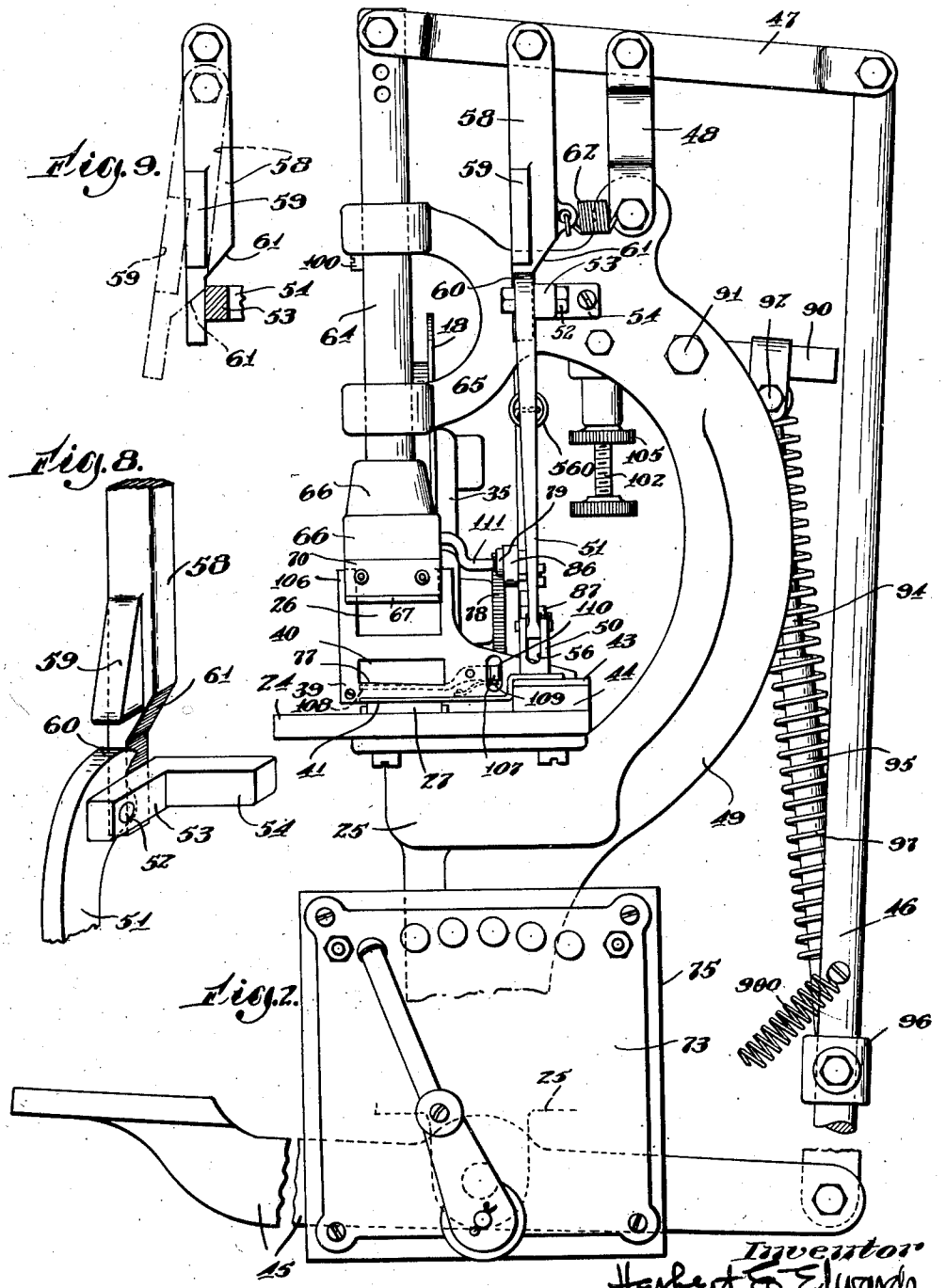


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LABEL AFFIXING MACHINE

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LABEL AFFIXING MACHINE

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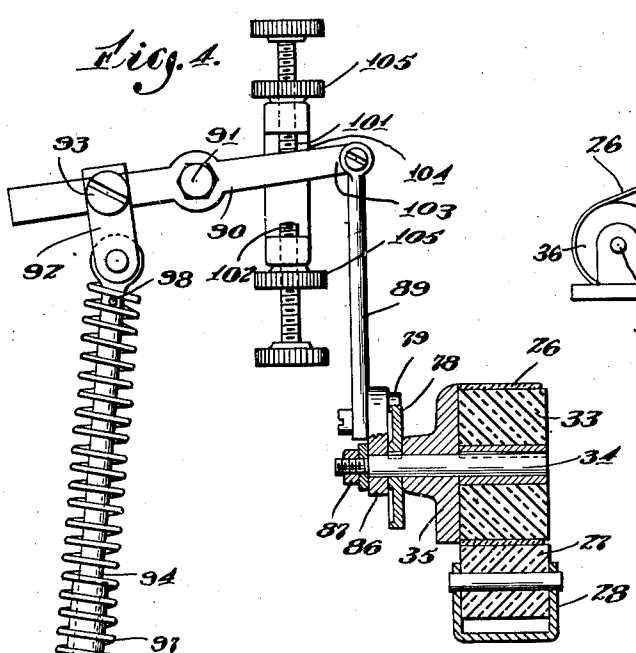


Fig. 4.

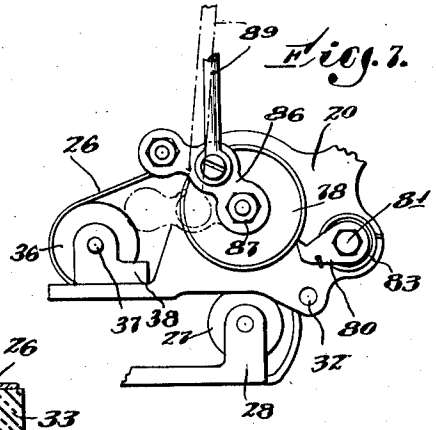


Fig. 7.

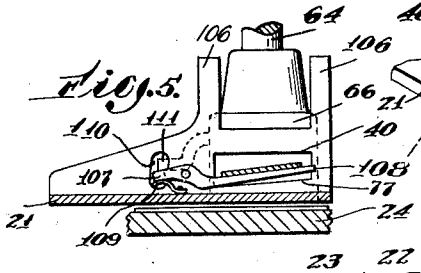


Fig. 5.

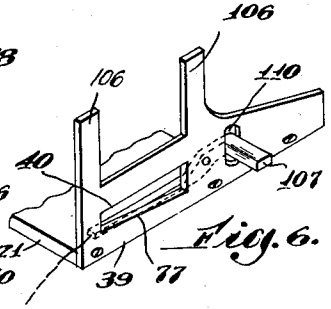


Fig. 6.

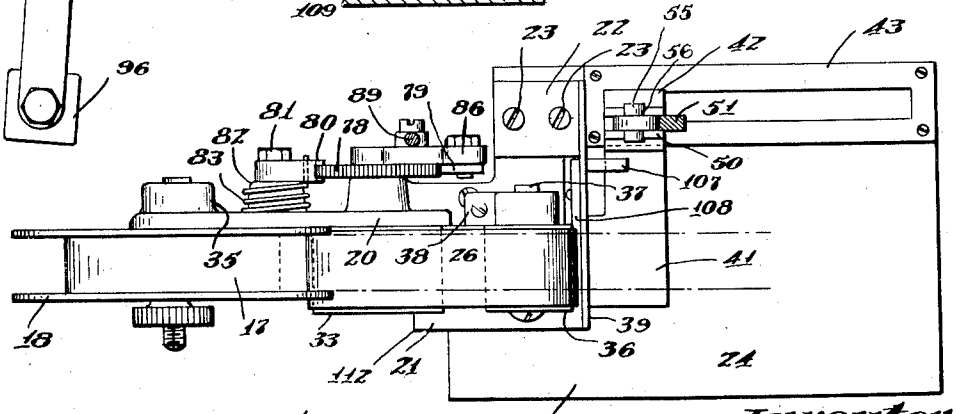


Fig. 3.

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LABEL AFFIXING MACHINE

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Fig. 10.

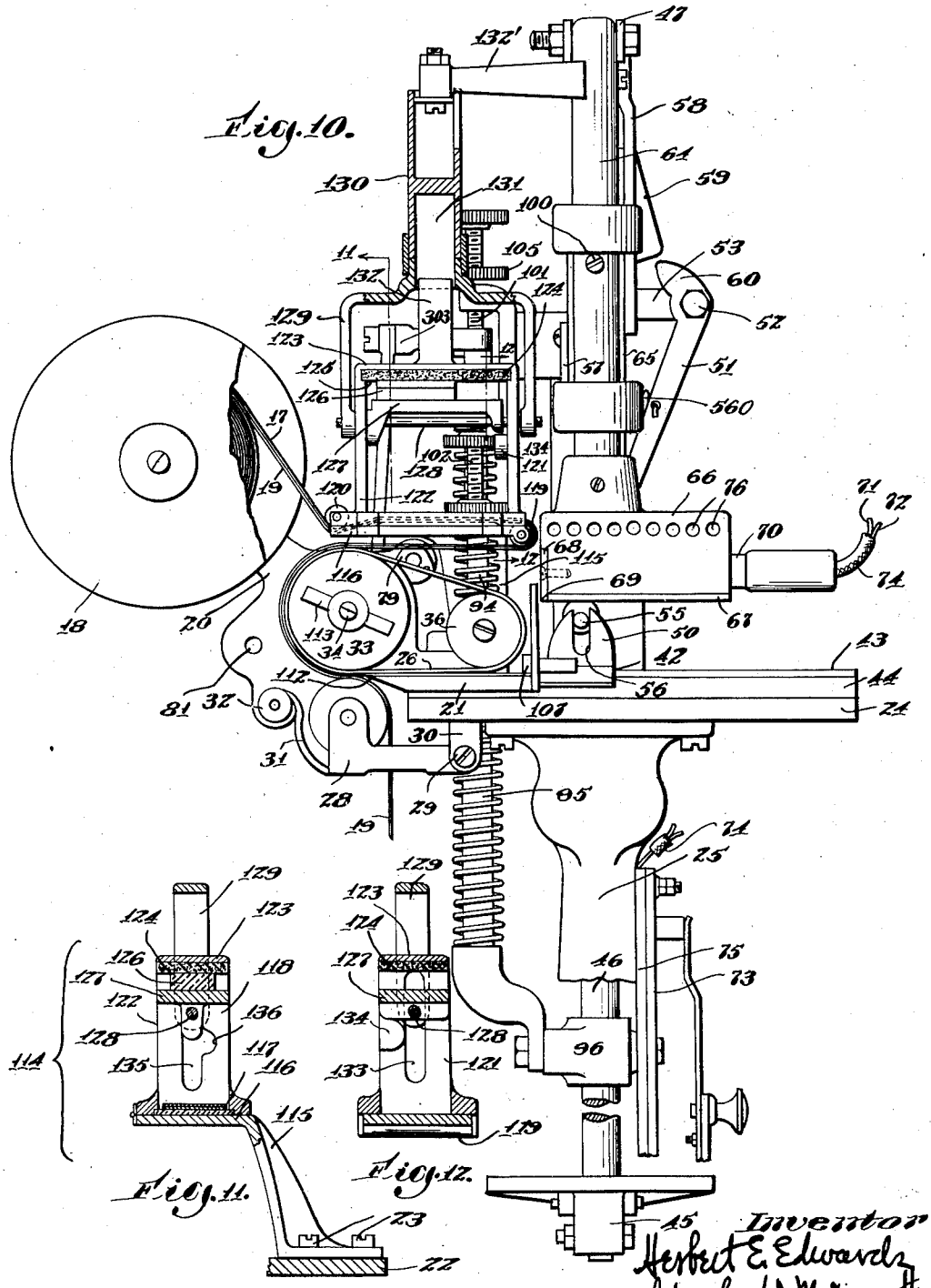


Fig. 11.

Fig. 12.

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Patented Aug. 7, 1934 1,968,881

UNITED STATES PATENT OFFICE

1,968,881

LABEL AFFIXING MACHINE

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Application June 9, 1930, Serial No. 460,029

32 Claims. (Cl. 216—25)

The present invention relates to machines for use in applying labels to a work piece, and more particularly to a machine for affixing labels to shoe parts.

For many years it has been customary in the manufacture of shoes to emboss designs, such as the trade-mark of the manufacturer or the trade-name of the retailer on the sock-lining which, when incorporated in the finished shoe, is exposed to view. The process of embossing is limited to the production of designs in one color. In order to produce multicolored designs for application to the sock-lining it has been proposed heretofore to print the multi-colored design on a label and to affix this label on the sock-lining before its incorporation into a shoe. To economize in the manufacture of the labels the designs are printed in spaced relation on a strip which is furnished to the shoe manufacturer in a coil. In certain types of label strips the face opposite to the face bearing the designs is coated with an adhesive which is normally non-adhesive under ordinary conditions of temperature but capable of being rendered tacky by heat. In using the coated strip the operator cuts off the label adjacent the free end thereof with scissors, places the cut off label by hand upon the sock-lining, and presses the label with a hot iron to render the coating on the label adhesive and to affix the label to the sock-lining. Experience has demonstrated that the pressure exerted by the operator, usually a girl, is insufficient to amalgamate the label properly with the sock-lining.

Another type of label strip is uncoated and the label after being severed from the strip is applied by hand to the sock-lining and then secured thereto by through and through stitches inserted by a sewing machine.

Both of the described methods of affixing labels to sock-linings are slow and laborious and add materially to the costs of manufacture.

When labels are affixed to a piece of work it is essential that the label be positioned properly with respect to the work and that it lie smoothly on the surface of the work. It has been difficult to position a gummed label smoothly and properly on the work piece for the reason that the label as it is being fed has a tendency to adhere to the surface of the work, thus causing the label strip to buckle.

One object of my invention is to provide a machine for affixing labels to work pieces which will position the labels smoothly in predetermined relations to the work pieces. To this end, one feature of the invention resides in a label affixing machine having a work support, a label strip severing and affixing mechanism, and a rest for supporting the free end of the label at the end of the strip interposed between the support and the mechanism, the illustrated rest being constructed and arranged to be moved out of the path of movement of the mechanism prior to the severing operation and to carry with it the free end of the strip until the free end of the strip is extended in a smooth position. As illustrated, the rest includes a flat plate which is interposed between the work support and the label severing and affixing mechanism. The illustrated plate is provided with connections to a cam, and the movement of the rest is so timed that the rest will be brought out of the path of movement of a presser member prior to the operation of the presser member.

The adhesively coated surface of a label strip is ordinarily protected by a strip of paper backing and before the label strip can be applied to the work the backing strip must be removed. Another object of this invention is to provide a label affixing machine with improved means for separating a backing strip from the label strip. Another feature of the invention, accordingly, resides in a label affixing machine having, in combination, means for supporting a label strip having a backing strip associated therewith, and means associated with said supporting means for separating the backing strip from the label strip.

When a label strip having an adhesive coating is presented to a severing mechanism, the pressure applied to the strip and the heat of the machine are likely to cause the strip to adhere to one portion of the severing device, thus interfering with the next feeding movement. A still further object of my invention is to provide improved means for releasing a label strip from a shearing device after the strip has been severed.

In accordance with this object, another feature of the invention resides in a label affixing machine having shearing edges cooperating to sever a label strip, and means for releasing the strip from the shearing device after the strip has been severed. In the illustrated embodiment of the invention, the releasing means comprises a lever which normally is held below a shearing edge under the influence of a spring and is caused to move upwardly after the strip has been severed by an arm extending from a presser member.

The various features of the present invention will be readily understood from an inspection of

the accompanying drawings illustrating the best forms of the invention at present known to the inventor, in which,

Figure 1 is a view in front elevation of a label affixing machine;

Fig. 2 is a view in right side elevation;

Fig. 3 is a view in sectional plan on the line 3—3, Fig. 1;

Fig. 4 is a view in sectional elevation on the line 4—4, Fig. 1;

Fig. 5 is a view in sectional elevation on the line 5—5, Fig. 1;

Fig. 6 is a detail view in perspective of the plate connected to the feed table;

Fig. 7 is a detail view in rear elevation of the feeding mechanism for the label strip;

Fig. 8 (Sheet 2) is a detail view in perspective of the breakable connection in the mechanism for reciprocating the rest in one direction;

Fig. 9 (Sheet 2) is a detail view in right side elevation (partly in section) of the parts shown in Fig. 8;

Fig. 10 (Sheet 4) is a view in front elevation of a label affixing machine which also prints the labels;

Fig. 11 is a view in sectional elevation on the line 11—11, Fig. 10;

Fig. 12 is a view in sectional elevation on the line 12—12, Fig. 10;

Fig. 13 (Sheet 1) is a detail view in plan of the label strip, and

Fig. 14 (Sheet 1) is a view in plan of the labeled sock-lining.

Referring first to Fig. 14 the illustrated embodiments of the present invention affix a label 15 to a sock-lining 16. One of the machines embodying the features of the present invention is provided with a label strip 17 (Fig. 13) having a plurality of designs 15 thereon spaced regularly throughout its length. The face of the strip 17 opposite the face bearing the designs 15 is coated with an adhesive, normally non-adhesive under ordinary conditions of temperature, but capable of being rendered tacky by heat. To facilitate handling and to permit the coiling of the strip 17 the coated face thereof is protected by a paper backing. During each cycle of operations of the machine the label, containing the design 15 nearest the free end of the strip 17, is cut off the strip, and this cut-off label is affixed to the sock-lining 16 by heat and pressure.

In the embodiment of the invention illustrated in Figs. 1 and 2 a supply reel 18 (Fig. 1), carrying the strip 17 in a coil and having intercoiled therewith a backing strip 19 of paper, is mounted on a bracket 20. The base of the bracket 20 is secured to a horizontal table 21 (Fig. 1), projecting laterally from a block 22 (Fig. 3), secured by screws 23 to a horizontal support 24 for the sock-lining 16. The work support 24 is bolted to the flat top of a column 25 the base of which (not shown) is secured to the floor.

The free end of the strip 17, together with its backing strip 19, is drawn from the supply reel 18 and is inserted between an endless rubber belt 26 and a rubber roll 27, (Fig. 1). To facilitate the insertion of the strips 17 and 19 between the belt 26 and the roll 27, the roll 27 is rotatably mounted in the vertical arms of a yoke 28 the horizontal arms of which are pivoted on a horizontal pin 29 supported by a bracket 30 depending from the work support 24. The yoke 28 is provided with an extension 31 which carries a removable pin 32 adapted to engage an opening formed in the bracket 20. With this construction the pin 32 may be removed from the opening in the bracket 20 thus allowing the roll 27 to drop under the influence of gravity away from the belt 26. After the strip 17 is positioned against the belt 26 the roll 27 is elevated into engagement with the backing strip 19 and the pin 32 is shot home into the opening therefor in the bracket 20.

The belt 26 passes over a large wooden roll 33 (Figs. 1 and 4) which is keyed to a horizontal shaft 34 journaled in a hub 35 on the bracket 20. The belt 26 also passes over a rubber roll 36 (Figs. 1 and 3) smaller than the roll 33. The roll 36 is mounted on a stub shaft 37 (Fig. 3) journaled in a bracket 38 secured to the bracket 20.

As shown in Fig. 1 the lower run of the belt 26 is horizontal and is spaced slightly above the upper surface of the feed table 21. After the strips 17 and 19 are inserted between the belt 26 and the roll 27 the strips 17 and 19 are separated, the strip 17 being led into the space between the belt 26 and the table 21, and the strip 19 being directed downwardly as waste.

Secured to one edge face of the table 21 is a plate 39 (Figs. 1, 5 and 6) having a slot 40 formed therein at a height above the strip supporting surface of the table 21. The strip 17 is pulled through the slot 40 so that the label nearest its free end protrudes therethrough into engagement with a rest 41 (Figs. 1, 2 and 3) acting as a smoothing plate.

The rest 41 comprises a reversed L-shaped flat plate (Fig. 3) secured at one end to a block 42 having a portion mounted to slide beneath a cover plate 43 in ways formed in an open topped rectangular box 44 (Fig. 2) carried by the work support 24. The free end of the label strip 17 under normal conditions is fed over the rest or smoothing plate 41 so that the extreme end of the strip projects beyond the forward edge of the plate 41, but under different conditions of temperature and humidity the adhesive coating on the strip may become slightly tacky with the result that the free end of the strip would adhere to the rest or plate 41, thus buckling the strip. Movement of the rest 41 to the position shown in dotted lines in Fig. 1 would bring the strip into a position substantially parallel with the surface of the work support 24. The rest or smoothing plate 41 thus insures that the free end of the strip will be arranged in proper position and will be presented to the work in a smooth condition, eliminating the possibility of wrinkling or improper positioning of the severed label relative to the work.

After positioning the label, nearest the free end of the strip, through the slot 40 and into engagement with the rest 41 the machine is ready to be actuated to perform its cycle of operations. First, the rest 41 is withdrawn from beneath the free end of the strip to allow it to sag into engagement with the sock-lining 16 mounted on the work support 24. Then the strip is severed to cut off the label nearest the free end of the strip and the cut-off label is subjected to heat to render the adhesive coating tacky and to pressure to affix the sticky label to the sock-lining.

Centrally pivoted on the column 25 near its base is a treadle lever 45 pivotally connected at its rear end to the lower end of a rod 46. The upper end of the rod 46 is pivoted to the rear end of a lever 47 centrally pivoted on an arm 48 (Fig. 2) secured rigidly to a bracket 49 integral with the column 25.

In order to reciprocate the rest 41 when the treadle lever 45 is operated the block 42 is pro-

vided with a yoke 50 (Figs. 1 and 2) the arms of which loosely embrace the lower end of an arm 51 pivoted on the shank of a bolt 52 carried by the free arm 53 of an angular bracket 54 secured to the bracket 49. The lower end of the arm 51 is provided with a pin 55 which works vertically in slots 56 (Fig. 1) formed in the arms of the yoke 50.

The arm 51 is maintained in a normal position with the rest 41 under the free end of the strip 17 by a coiled spring 560 one end of which is connected to the arm 51 and the other end of which is connected to an arm 57 secured to the bracket 49.

In order to reciprocate the rest 41 from beneath the free end of the strip 17 against the tension of the spring 560 the lever 47 carries an arm 58 pivoted thereto (Figs. 2, 8 and 9). The arm 58 is provided with a lug 59 which is adapted to engage a tail 60 on the arm 51 and swing the arm 51 to reciprocate the rest 41 from the full to the construction line position of Fig. 1 when the treadle lever 45 is operated to elevate the rod 46. Because the tail 60 is short and the arm 51 is long the rest 41 is reciprocated rapidly from the full to the construction line position of Fig. 1.

The arm 51 is restored to the influence of the spring 560 by a cam surface 61 (Figs. 8 and 9) on the arm 58 which engages the arm 53 of the bracket 54 during the downward movement of the arm 58 and swings it to the left (Fig. 2) to cause the lug 59 to ride off the tail 60. When this occurs the rest 41 is returned to its initial position by the spring 560. The arm 58 is returned to its initial position during its upward movement by a coiled spring 62 (Fig. 2) one end of which is secured to the arm 58 and the other end of which is secured to the rigid arm 48. As shown in Figs. 8 and 9 the arm 53 limits the movement of the arm 58 under the influence of the spring 62.

Pivotally connected to the front end of the lever 47 is a vertical plunger rod 64 (Figs. 1 and 2) mounted to slide in the arms of a yoke 65 (Fig. 2) integral with the bracket 49. Secured to the lower end of the plunger rod 64 is a metal block 66 having on its bottom a pressing sole 67, and having on one side face a shearing plate 68 (Fig. 1) the exposed edge face 69 of which forms a continuation of the pressing sole 67. The pressing sole 67 is heated by a heating unit 70, carried by the block 66, and supplied with current through wires 71 and 72 which are led from the terminals of a rheostat 73 by a cable 74. The rheostat 73 is secured to a plate 75 carried by the column 25. Liability of the pressing sole 67 to overheat is minimized by openings 76 formed in the block 66 for the circulation of air therethrough.

When the pedal end of the treadle lever 45 is depressed the front end of the lever 47 is moved downwardly to withdraw the rest 41 from beneath the free end of the strip 17 and to clear the pressing sole 67 (Fig. 1). Downward movement of the front end of the lever 47 also brings the shearing edge 68 into engagement with the free end of the strip 17. To sever the strip 17 the shearing edge 68 cooperates with a shearing edge 77 formed by the exterior lower wall of the slot 40 in the plate 39. As shown in Figs. 5 and 6 the shearing edge 77 is inclined downwardly from front to rear in order that the severing of the strip 17 may proceed progressively across the width of the strip exactly as if a pair of shears having a common pivot was employed to sever the strip.

After the label nearest the free end of the strip has been cut off by the shearing edges 68 and 77 continued downward movement of the rod 64 causes the heated pressing sole 67 together with its continuation 69 to engage the label and press it firmly against the sock-lining 16. The heat renders the adhesive coating tacky and the pressure amalgamates the sticky label with the sock-lining.

The foregoing description has been directed principally to a description of the construction and mode of operation of the machine whereby the first label in the strip 17 is severed therefrom and affixed to the sock-lining. After the first label is affixed to the sock-lining the machine feeds the free end of the strip 17 out through the slot 40 to position another label for the strip severing and label affixing mechanism.

To this end the shaft 34 for the roll 33 has keyed thereto a ratchet 78 (Figs. 1, 3 and 7) engaged by a feeding pawl 79 and a retaining pawl 80. The retaining pawl 80 is pivoted on the shank of a bolt 81 (Fig. 3) secured to a boss 82 on the bracket 20. The pawl 80 is held in engagement with the ratchet 78 by a spring 83, coiled around the boss 82, one end of which is connected to the pawl 80 and the other end of which is connected to the bracket 20.

The feeding pawl 79 is pivoted on an arm 86 pivoted on the shaft 34. The arm 86 is held in place on the shaft 34 by suitable nuts 87 threaded on the adjacent end of the shaft 34. The pawl 79 is held in engagement with the ratchet yieldingly during its idle stroke and positively during its operating stroke by a spring-pressed ball mounted in the arm 86 and engaged with a notch on the tail of the pawl in accordance with a well known commercial construction.

The arm 86 is pivotally connected to one end of a rod 89 (Fig. 4) the other end of which is pivoted to one end of a lever 90 pivoted on the shank of a bolt 91 carried by the bracket 49. The lever 90 is provided with a block 92 which may be moved along the lever 90 and then held in its position of adjustment by a screw 93. Pivoted to the block 92 is a rod 94 having a telescopic engagement with another rod 95 the lower end of which is pivoted on a collar 96 (Fig. 1) adjustably secured to the rod 46. Movement of the rod 94 into and out of the rod 95 is resisted by a spring 97 coiled about both of the rods and held in place thereon by pins 98 and 99 on the rods 94 and 95, respectively. As shown in Fig. 4 the pins 98 and 99 are embraced by adjacent convolutions of the spring 97.

When the treadle lever 45 is depressed to elevate the rod 46, to operate the rest 41, to sever the strip 17 and to affix the label to the sock lining 16, the pawl 79 through the connections described is moved idly on the ratchet 78 from the full to the construction line position of Fig. 7. After the label is affixed to the sock-lining the treadle lever 45 is released whereupon a tensioned spring 990 (Fig. 2) interposed between the rod 46 and the base of the column 25 elevates the pedal on the treadle lever 45 and the rod 64 to their normal positions. This is determined by a screw 100 on the rod 64 which engages one of the arms of the yoke 65. As soon as the pressing sole 67 and shearing edge 68 clear the slot 40 the tensioned spring 97 returns the pawl 79 to its normal full line position of Fig. 7. As the pawl 79 during this return movement is engaged with a tooth

on the ratchet wheel 78 the pawl 79 rotates the shaft 34. Referring to Fig. 4 it is apparent that the rod 95 moves downwardly with the rod 64 under the influence of the tensioned spring 990 when the pedal on the treadle lever 45 is released. The result of this is to delay the action of the tensioned spring 97 in returning the pawl 79 to the full line position of Fig. 7. With this construction the pressing sole 67 and the shearing edge 68 are elevated above the shearing edge 77 through the influence of the spring 990 before the ratchet 78 is actuated to rotate the shaft 34 through the influence of the spring 97.

Rotation of the shaft 34 imparts a feeding stroke to the belt 26 to feed the free end of the strip 17 over the table 21 through the slot 40. At this time the rest 41 is in position to receive the free end of the strip 17. If the rest 41 was not used the free end of the strip 17 would sag down and engage the sock-lining 16 so that continued feed of the strip 17 would produce a buckle in the strip between the slot 40 and the point of engagement of the strip with the sock-lining. By providing the rest 41, buckling of the strip between the slot 40 and the point of engagement of the strip with the rest 41 does no harm as the buckle is straightened out when the rest 41 is withdrawn from beneath the strip.

In order to control the length of the feed imparted to the strip 17 by the belt 26 and to provide for the variation in the length of the feed for labels of different lengths the extremes of movement of the lever 90 are determined by stop screws 101 and 102 (Fig. 4) arranged to engage an extension 103 (Fig. 1) on the lever 90 at the end of the operative and idle strokes of the pawl 79, respectively. The screws 101 and 102 are adjustably mounted, respectively, in the arms of a yoke (Fig. 1) formed on a bracket 104 secured to the bracket 49. The adjustment of the screws 101 and 102 are maintained by locking nuts 105 (Figs. 1, 2 and 4).

It will be apparent to those skilled in the art that during the operation of the machine heat from the pressing sole 67 and the shearing edge 68 will radiate to adjacent parts such as the shearing edge 77. In order to prevent the expansion of the shearing function the plate 39 is provided with two upstanding arms 106 leaning with the plate slightly to the left (Fig. 1). When the plate 39 and the shearing edge 68 expand under heat the arms 106 engage the shearing edge 68 and guide it past the slot 40, there being sufficient play in the parts to permit the supports for the expanded shearing edges to yield relatively during the sliding contact between the plate 39 and the shearing edge 68.

There is a tendency for the free end of the strip to stick to the shearing edge 77 under the pressure produced by the operation of severing the strip, whether the strip is tacky or not. In order to release the free end of the strip from the shearing edge 77 preliminary to the feed of the strip the plate 39 carries a lever 107 (Figs. 1, 5 and 6) pivoted thereto. One end of the lever 107 is formed into a finger 108 which is interposed between the table 21 and the free end of the strip 17 adjacent to the plate 39. The other end of the lever 107 is engaged by a leaf spring 109 secured at one end to the table 21. This spring 109 holds the finger 108 normally below the slot 40 (Fig. 6).

In order to operate the finger 108 to cause it to release the free end of the strip from the shearing edge 77 preliminary to the feed of the strip the lever 107 is provided with a bent arm which passes through a slot 110 in the plate 39. When the pressing sole 67 and shearing edge 68 are depressed an arm 111 carried by the metal block 66 engages the bent arm of the lever 107 thus causing the finger 108 to separate the free end of the strip from the shearing edge 77 immediately upon the severing of the strip to produce the label.

During the feed of the strip over the table 21 a sharp edge 112 thereon (Fig. 1) separates the paper backing 19 from the strip 17.

From an inspection of Fig. 13 it will be apparent that each feeding stroke of the pawl 79 should move the belt 26 and the strip engaged thereby a distance equal to the length of one label thus to register a point on the strip, midway between the first and second labels adjacent the free end of the strip, with the shearing edge 77. The length of the feeding stroke may be controlled accurately by the stop screws 101 and 102. Sometimes, however, a slight variation may occur in the length of the space separating the labels in the strip due to some fault in the manufacture thereof. To enable the operator to compensate the position of the strip at the shearing edge 77 for this variation, the front end of the shaft 34 is provided with a cross-bar 113 so that the operator may rotate the shaft 34 by hand when desired.

Generally, the design on the label affixed to the sock-lining is the trade-name of the retailer. If the retailer orders shoes in large quantities from the shoe manufacturer it is economy to use in the machine the type of label strip illustrated in Fig. 13. Many shoe manufacturers serve a large number of retailers who order small quantities of shoes at a time. Neither the shoe manufacturer nor these small retailers can afford to use in the machine the label strip illustrated in Fig. 13 owing to the high cost thereof when purchased in lengths limited to the number of labels needed in manufacturing the shoes in the small order.

To overcome this difficulty I propose to furnish to the shoe manufacturer a label strip similar to the strip 17 but having on its uncoated face a background of solid color without the retailer's trade-name thereon and to print this trade-name in the machine for affixing the label to the sock-lining.

To this end the screws 23 (Fig. 3) which secure the block 22 to the work support 24 may be removed and a printing unit 114 (Figs. 10, 11 and 12) may be then placed upon the block 22 and the screws 23 reinserted to secure the unit 114 to the block 22 and the block 22 to the work support 24.

The unit 114 comprises a bracket 115 terminating in a horizontal shelf 116 above the feeding belt 26. This shelf 116 supports a rubber bed 117. Hinged to the shelf 116 is a printing unit frame 118 which in operation occupies the position illustrated in Fig. 11, but which may be swung laterally to permit the label strip and its paper backing to be positioned on the bed 117 before the free end of the strip is led in between the rubber belt 26 and the rubber roll 27. To facilitate the feed of the label and backing strips over the bed 117 the shelf 116 carries a roller 119 and the base of the printing unit frame 118 carries a roller 120, the strips passing onto the bed 117 under the roller 120 and from the bed over the roller 119.

The printing unit frame 118 comprises vertical sides 121 and 122 which are integrally connected

to a top 123 having a flat underside. Adjacent the flat underside of the top 123 the sides 121 and 122 are provided with ways 124 which removably support an ink pad 125.

Normally the ink pad 125 is engaged by a printing member 126 for printing the design on the label strip. The printing member 126 is mounted removably on a yoke 127 which is secured to a horizontal rod 128 the opposite ends of which are loosely mounted in the arms of a yoke 129. The yoke 129 terminates in a cylindrical head 130 having an opening 131 therein to receive a cylindrical guide 132 projecting upwardly from the top 123. The head 130 is secured to an arm 132' projecting laterally from the rod 64.

In order to reverse the position of the printing member 126 from that of Figs. 10 and 11 to a position where it engages and prints the design on the label strip on the bed 117 the wall 121 is provided with a vertical slot 133 and a lug 134 which engages one of the arms of the yoke 127. The wall 122 is also provided with a slot 135 but this slot is provided with a lateral extension 136 into which the adjacent arm of the yoke 127 may pass. With this construction downward movement of the yoke 129 causes the lug 134 and the extension 136 to impart successive rotative movements to the yoke 127 and thus reverse the position of the printing member 126 as it travels from a position where it engages the ink pad to a position where it engages the label strip.

As the ink pad 123 and printing member 126 are removable and interchangeable with other ink pads and printing members the printing unit 114 is adapted to print different designs in different colors on the strip 17 having the solid background.

Nothing herein explained is to be interpreted as limiting the invention in the scope of its application to use in connection with the particular label strips, or the particular apparatus or the particular mode of operation selected for purposes of illustration and explanation. Many features of the present invention may be used to advantage in affixing a cold process label instead of a hot process one whether the work labeled is a sock-lining or some other article. While the particulars of construction herein set forth are well suited to one mechanical form of the invention for affixing a hot process label to a sock-lining, it is not limited to such work, nor to these details of construction, nor to the conjoint use of all its features, nor is it to be understood that these particulars are essential since they may be modified within the skill of the artisan without departing from the true scope of the actual invention, characterizing features of which are set forth in the following claims by the intentional use of generic terms and expressions inclusive of various modifications.

What is claimed as new, is:

1. In a label affixing machine, a work support, label strip severing and label affixing mechanism, and a rest interposed between the support and said mechanism for the free end of the label strip, said rest being constructed and arranged to be moved out of the path of movement of said mechanism prior to the severing of the strip.

2. In a label affixing machine, a work support, label strip severing and label affixing mechanism, and a rest interposed between the support and said mechanism for the free end of the label strip and constructed and arranged for movement at one side only of the severing mechanism, said rest and said mechanism being relatively movable in two directions normal to each other.

3. In a label affixing machine, a work support, label strip severing and label affixing mechanism, means for feeding the free end of the label strip in between the support and said mechanism, and a rest interposed between the support and said mechanism for the free end of the label strip, said rest being constructed and arranged to be moved out of the path of movement of said mechanism prior to the severing operation.

4. In a label affixing machine, a work support, label strip severing and label affixing mechanism, means located at one side of the severing mechanism for feeding the free end of the label strip in between the support and said mechanism, and a rest interposed between the support and said mechanism for the free end of the label strip and located at the other side of the severing mechanism, said rest and said mechanism being relatively movable in two directions normal to each other.

5. In a label affixing machine, in combination a table for a label strip, means for feeding the strip thereon to project its free end into space beyond the table, label-strip severing mechanism, and a rest for the projected free end of the strip, said rest being constructed and arranged to be moved out of the path of movement of said mechanism prior to the strip severing operation.

6. In a label affixing machine, a work support, a table located beside the work support for supporting the label strip, means for feeding the strip over the table to project the free end of the strip into space beyond the table, and a rest directly over the work support to receive the projecting free end of the strip, said rest being movable to drag with it the unsevered free end of the strip until the free end is smoothly extended.

7. In a label affixing machine, a work support, a table beside the work support for supporting the label strip, means for feeding the strip over the table to project the free end of the strip into space beyond the table, and a rest directly over the work support for the projecting free end of the strip, and means for reciprocating the rest.

8. In a label affixing machine, a work support, a table for the label strip, means for feeding the strip thereon to project its free end into space beyond the table, a rest directly over the work support to receive the projecting free end of the strip, and means for reciprocating the rest in a plane parallel to the work support.

9. In a label affixing machine, a work support, a table for a label strip, feed rolls for feeding the label strip over the table to project the free end of the strip into space beyond the table, a rest directly over the work support to receive the projecting free end of the strip, and means including a cam and a spring for reciprocating the rest in a plane parallel to the work support.

10. In a label affixing machine, a work support, a table beside the work support for supporting the label strip, strip severing and label affixing mechanism, means for feeding the label strip over its table to project the free end of the strip into space beyond the table in between the work support and said mechanism, and a rest located directly over the work support to receive the projected free end of the strip said rest being movable in the direction of feed of the strip.

11. In a label affixing machine, a work support, a table beside the work support for supporting the label strip, strip severing and label affixing mechanism, means for feeding the label

strip on its table to project the free end of the strip into space beyond the table in between the work support and said mechanism, a rest directly over the work support to receive the projected free end of the strip, and means for withdrawing the rest from the free end of the strip prior to the operation of the severing mechanism.

12. In a label affixing machine, a work support, a table for the label strip, label affixing mechanism, strip severing mechanism associated with the affixing mechanism, means located at one side of the severing mechanism for feeding the label strip on its table to project the free end of the strip into space beyond the support in between the work support and said mechanism, a rest located at the other side of the severing mechanism and directly over the work support for the free end of the strip, and means for moving relatively the rest and said mechanism in directions normal to each other.

13. In a label affixing machine, a work support, a table for the label strip, strip severing and label affixing mechanism, means for feeding the label strip on its table to project the free end of the strip into space beyond the table in between the work support and said mechanism, a rest directly over the work support for the free end of the strip, and means operating successively for withdrawing the rest from between the work support and said mechanism and for actuating said mechanism to cut off a label from the free end portion of the strip and affix the cut off label to the work.

14. In a label affixing machine, a work support, strip severing and label affixing mechanism normally elevated above the work, a rest for the free end of the label strip normally interposed between the work support and said mechanism and located at one side of the severing mechanism, and means for moving relatively the rest and said mechanism in two directions normal to each other.

15. In a label affixing machine, a work support, strip severing and label affixing mechanism normally elevated above the work, a rest for the free end of the label strip normally interposed between the work support and said mechanism and located at one side of the severing mechanism, and a cam for moving the rest in a direction normal to the direction of movement of said severing and affixing mechanism prior to the severing of a label from said strip.

16. In a label affixing machine, means for severing a label strip, a rest for the free end of the label strip, and means constructed and arranged to move the rest in a path to straighten the strip prior to the operation of the severing means.

17. In a label affixing machine, a reciprocable member for operating on a label strip, a rest for the free end of the label strip, and a cam for moving the rest out of the path of movement of the reciprocable member in a path normal to the path of movement of said member prior to severing the label from a label strip.

18. In a label affixing machine, the combination with a rest for the free end of a label strip, of means for reciprocating the rest comprising a spring for reciprocating the rest in one direction and mechanism including a breakable connection for reciprocating the rest in the other direction against the tension of the spring.

19. In a label affixing machine, the combination with a rest for the free end of a label strip, of means for reciprocating the rest comprising a spring for reciprocating the rest in one direction and mechanism including a breakable connection for reciprocating the rest in the other direction against the tension of the spring, and means for breaking the connection to restore the rest to the influence of the tensioned spring.

20. In a label affixing machine, the combination with a rest for the free end of a label strip, of means for reciprocating the rest comprising a spring for reciprocating the rest in one direction and mechanism for reciprocating the rest in the other direction against the tension of the spring comprising a bracket, an arm pivoted thereto and slidably connected to the rest, a lever, an arm pivoted thereto provided with a cam surface and means for engaging the first arm, a spring for maintaining the means on the second arm in the same plane as the first arm, and mechanism for operating the lever to cause the means on the second arm to engage the first arm to reciprocate the rest and to cause the cam to engage the bracket and disengage the said means from the first arm at a predetermined point in the reciprocation of the support.

21. A label affixing machine having, in combination, means for supporting a label strip having a backing strip associated therewith, means for separating the backing strip from the label strip, means for supporting the free end of the label strip to prevent premature adhesion of the strip to the work, means for moving the supporting means away from the separating means to straighten the free end of the label strip, and means for applying the free end of the label strip to the work.

22. A label affixing machine having, in combination, means for supporting a label strip having a backing strip associated therewith, means for separating the backing strip from the label strip, a rest arranged to support the free end of the strip to prevent buckling of said strip before a label is severed therefrom, means for cutting off the label nearest the free end of the strip and subjecting it to pressure in contact with the work and means for moving said rest out of the path of movement of said affixing means prior to the operation of said cutting means.

23. A label affixing machine having, in combination, means for supporting a label strip having a backing strip associated therewith, means for separating the backing strip from the label strip, means for applying the free end of the label strip to the work, means for supporting said free end prior to cutting a label from the strip to prevent buckling of the strip and premature adhesion of said strip to the work, means for cutting off the label nearest the free end of the strip and affixing it to the work, and mechanism for moving said supporting means out of the path of movement of said affixing means prior to the operation of said cutting means.

24. A label affixing machine having, in combination, a support for a label strip having a backing strip associated therewith, a knife edge separator for separating the backing strip from the label strip, a support for the free end of the label strip to prevent premature adhesion of the strip to the work, a reciprocable plunger for applying the free end of the label strip to the work, and means for moving the support for the free end of the label strip out of the path of movement of the plunger in a path substantially normal thereto prior to severing a label from the label strip.

25. A label affixing machine having, in combination, means for supporting a label strip hav-

ing a backing strip associated therewith, means for separating the backing strip from the label strip, means for applying the free end of the label strip to the work, means for cutting off the label nearest the free end of the strip, means for releasing the strip from the cutting means, and means for rendering the cut off label adhesive and affixing it to the work.

26. A label affixing machine having, in combination, means for supporting a label strip having a backing strip associated therewith, means for separating the backing strip from the label strip, means for applying the free end of the label strip to the work, means for releasing the strip from the cutting means, and means for cutting off the label nearest the free end of the strip and subjecting it to heat and pressure in contact with the work.

27. A label affixing machine having, in combination, a table for supporting a label strip having a backing strip associated therewith, a separator associated with said table for separating the backing strip from the label strip, a heated presser member for applying the free end of the label strip to a work piece, a shear member associated with the presser member for cutting off the label nearest the free end of the strip, and a finger constructed and arranged to release the strip from the shear member.

28. In a label affixing machine, a stationary shearing edge and a movable shearing edge cooperating to sever a label strip, and means for releasing the strip from the stationary shearing edge after the strip has been sheared, said releasing means being mounted close to the stationary shearing edge and constructed and arranged to lift the tip of the unsevered strip above said edge.

29. In a label affixing machine, a stationary shearing edge and a movable shearing edge cooperating to sever a label strip, means for feeding the strip over the stationary shearing edge, and means for releasing the strip from the stationary shearing edge after the strip has been sheared but before the strip is fed.

30. In a label affixing machine, a stationary shearing edge and a movable shearing edge cooperating to sever a label from a label strip, feed rolls for feeding the strip over the stationary shearing edge and an angularly movable finger for releasing the strip from the stationary shearing edge after the strip has been sheared but before the strip is fed.

31. In a label affixing machine, shearing members cooperating to sever a label from a label strip, and means adjacent to the lower shearing member movable to lift the end of the strip above said member thereby to release the strip from a portion of the shearing device after the strip has been severed while leaving the end of the unsevered strip in position to be moved over said shearing member at the next operation of the machine.

32. In a label affixing machine, a support for a label strip having a backing strip associated therewith, a separating member associated with said support for separating the backing strip from the label strip, shear members for severing a label from said label strip, a rest movable in a plane substantially parallel to said support for supporting the free end of said label strip, and mechanism for moving said rest prior to the operation of the shear members.

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