

L. C. PALMER.
 LABELING MACHINE.
 APPLICATION FILED JULY 1, 1909

1,034,640.

Patented Aug. 6, 1912.

7 SHEETS—SHEET 1.

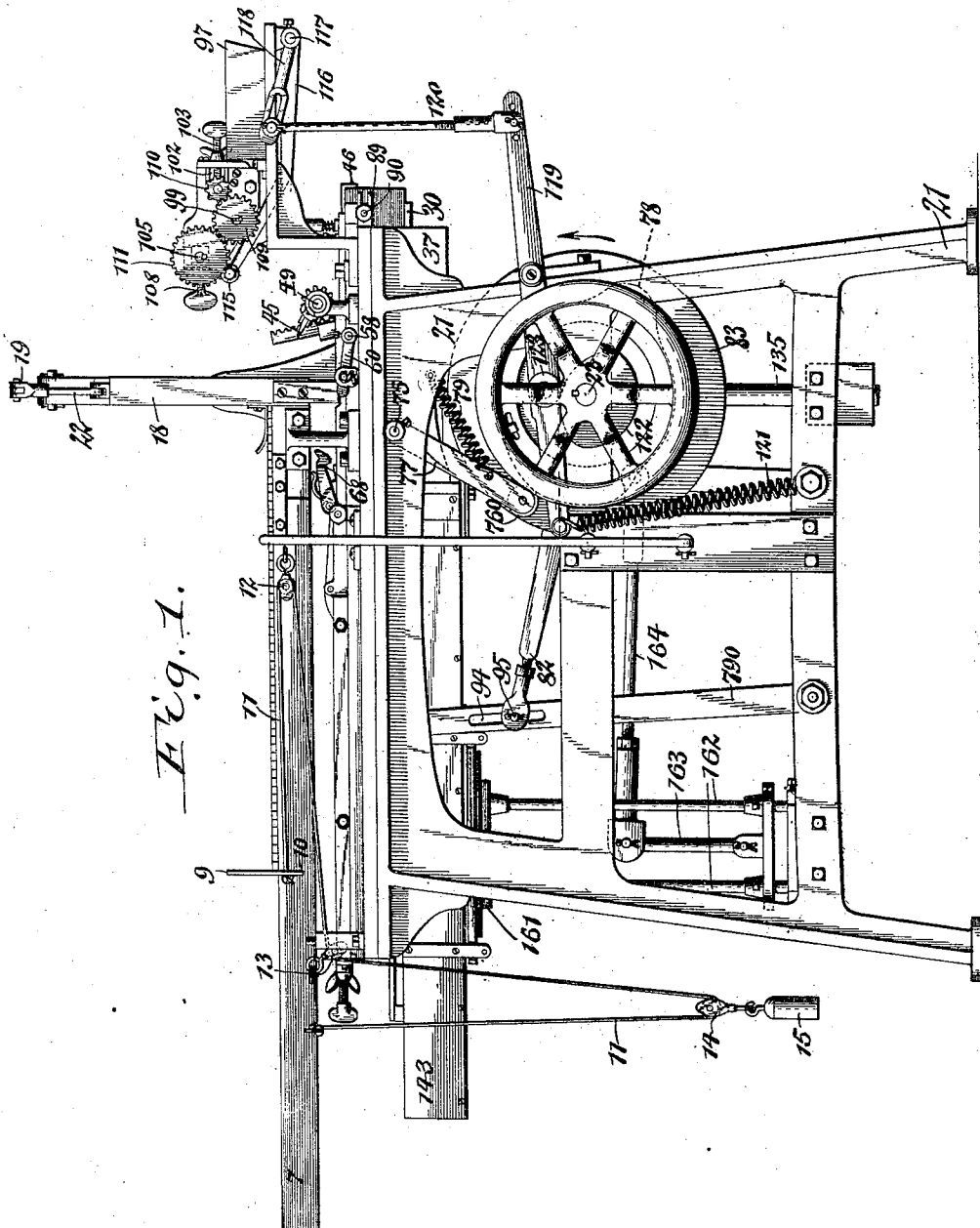


Fig. 1.

Witnesses:
 Richard Sommer
 John H. Shoemaker

Inventor
 Lyndan C. Palmer
 by Eyer & Rapp
 Attorneys

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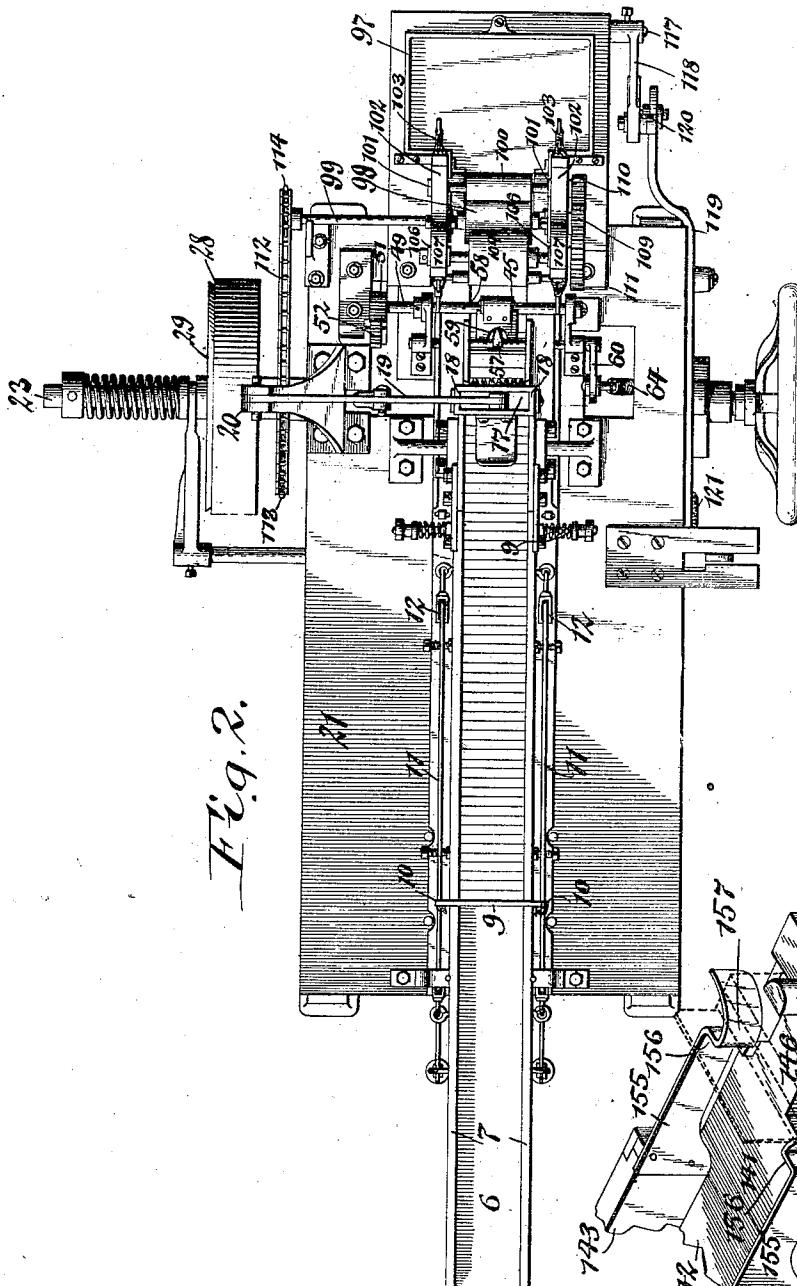


Fig. 2.

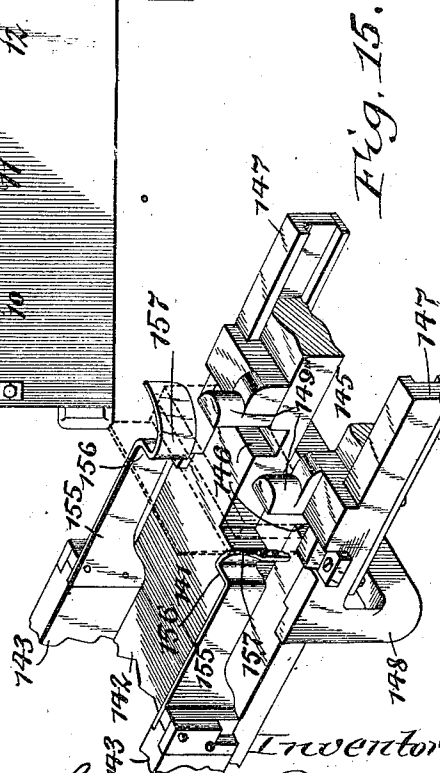


Fig. 15.

Witnesses:
Richard Sommet.
John H. Shoemaker

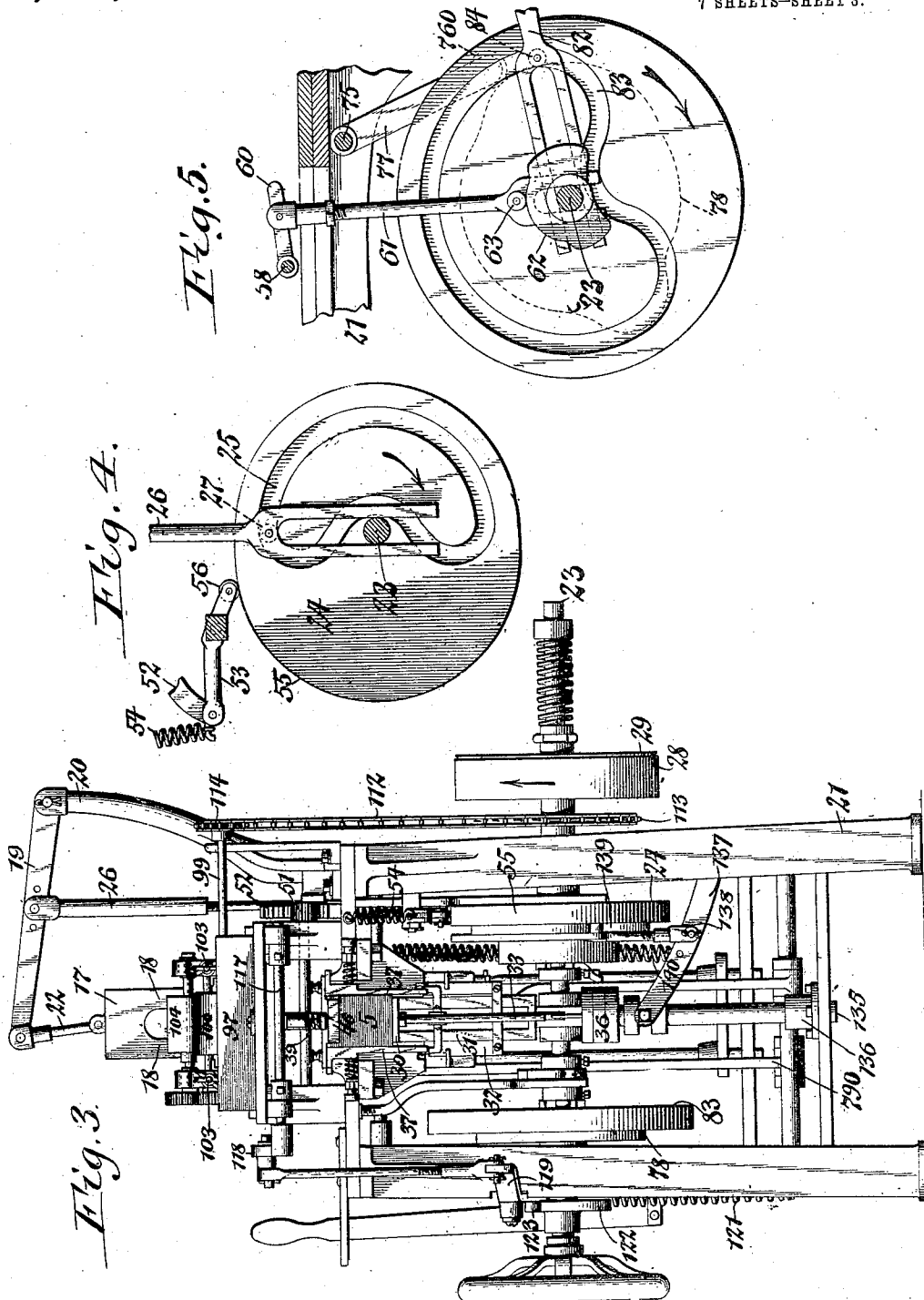
Inventor
Lyndan C. Palmer
by Geyer & Poph
Attorneys.

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Witnesses:
Richard Sommer.
John H. Shoemaker

Inventor
Lyndon C. Palmer
by Ruper & Roffe
Attorneys

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7 SHEETS—SHEET 4.

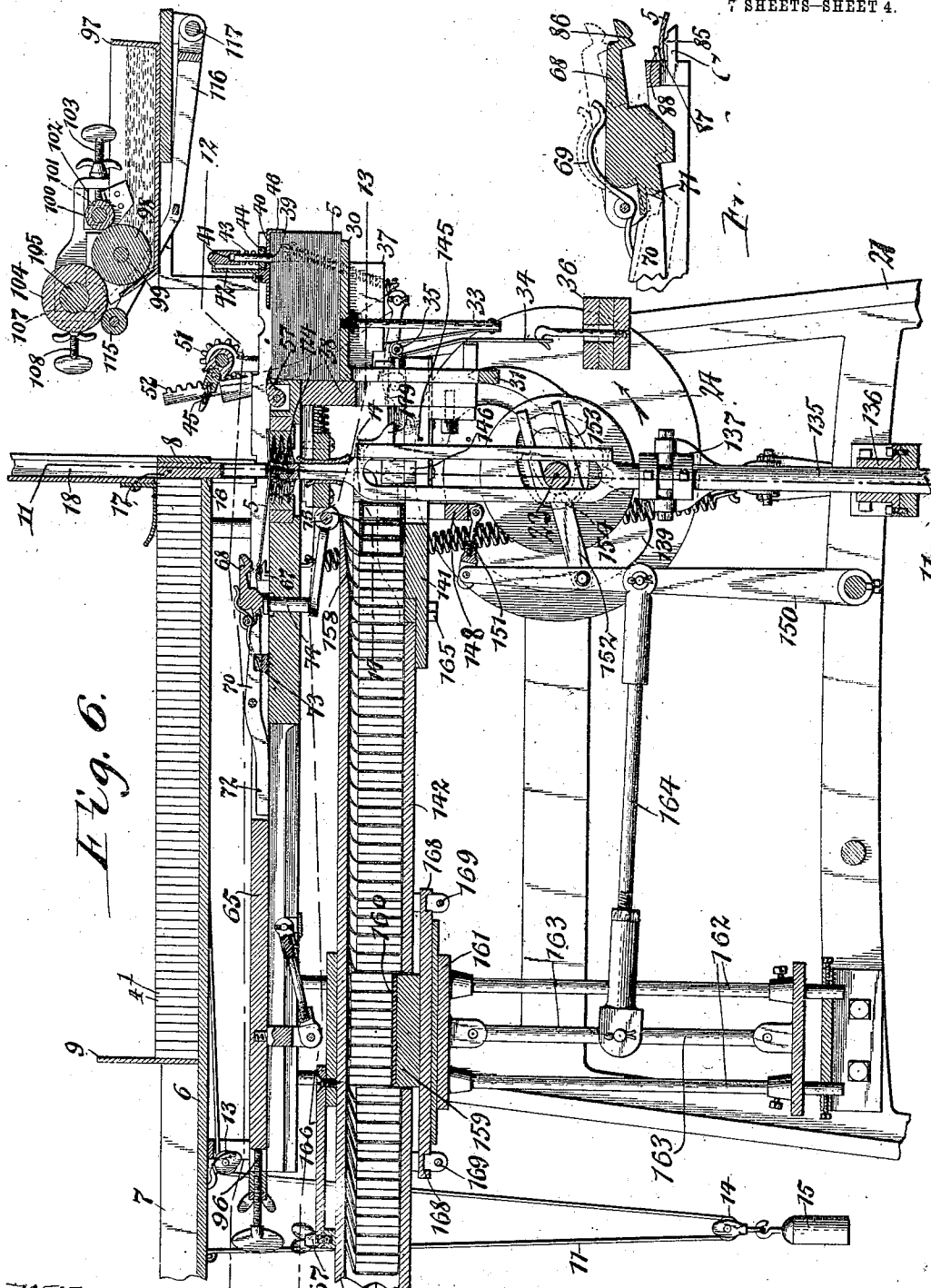


Fig. 6.

Witnesses:
 Richard Sommer
 John H. Shoemaker

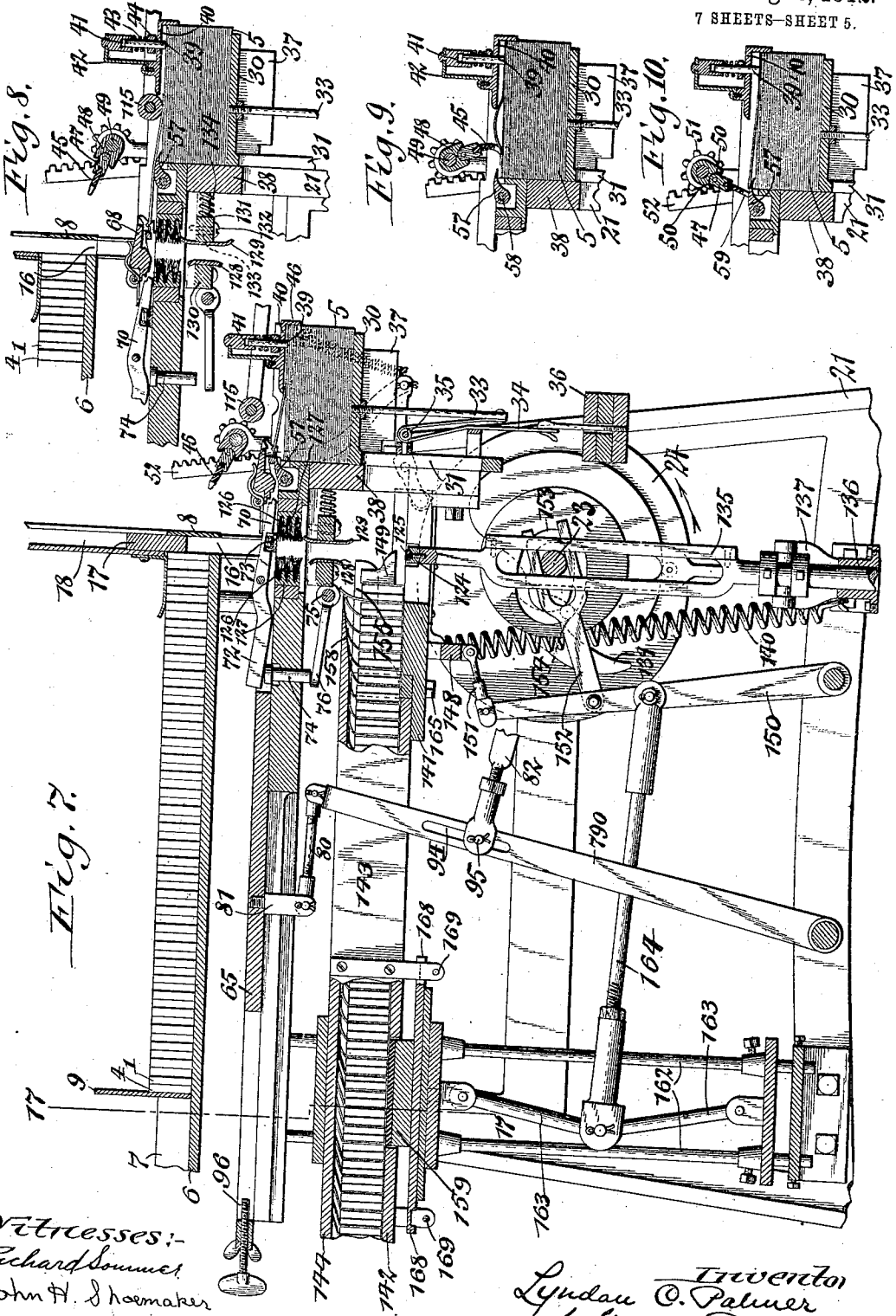
Inventor
 Lyndsay C. Palmer
 by *Super & Popp*
 Attorneys

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7 SHEETS—SHEET 5.



Witnesses:
 Richard Sommer
 John H. Schemaker

Inventor
 Lyndau O. Palmer
 by Geyer & Popp
 Attorneys

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7 SHEETS-SHEET 6

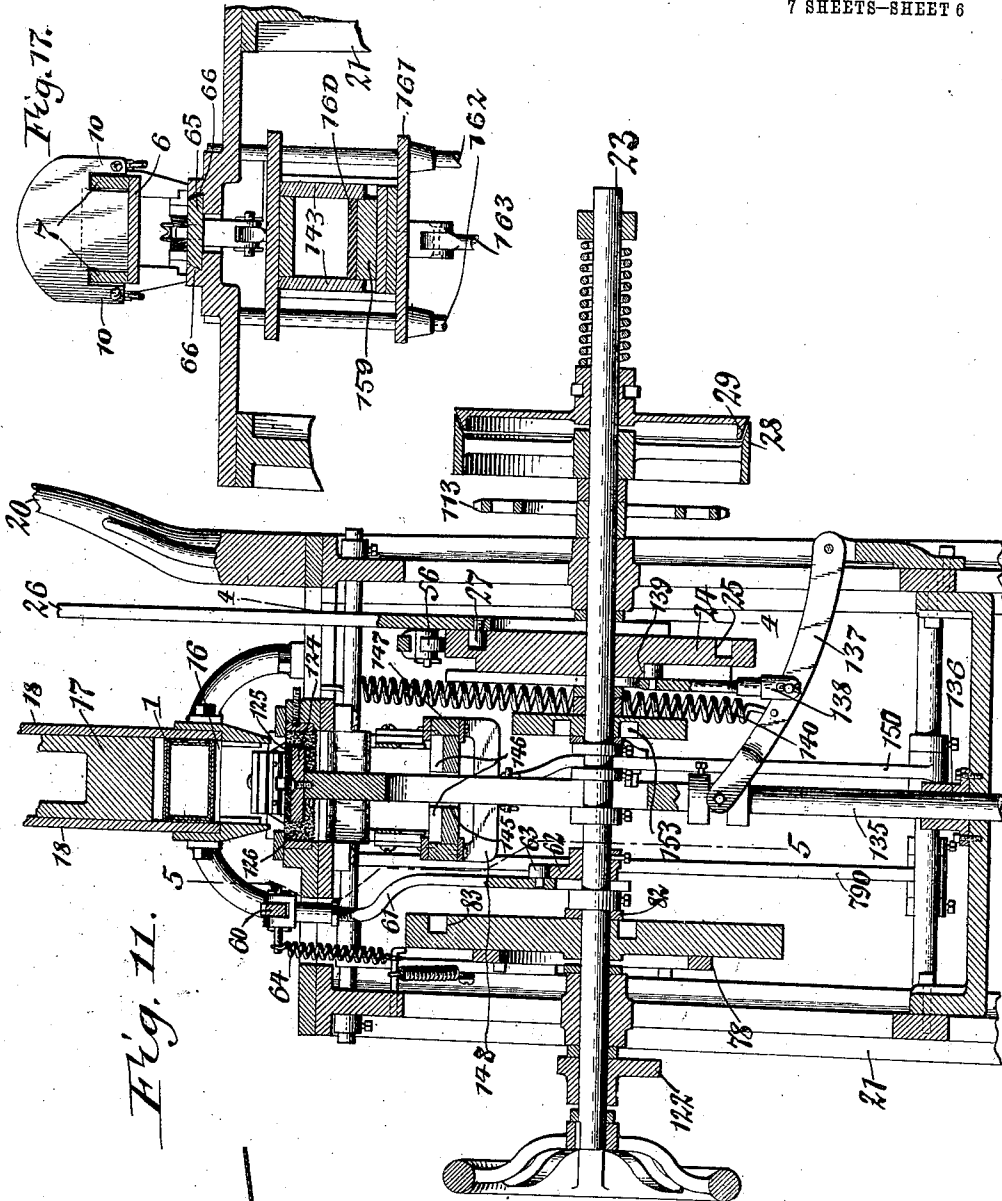


Fig. 11.

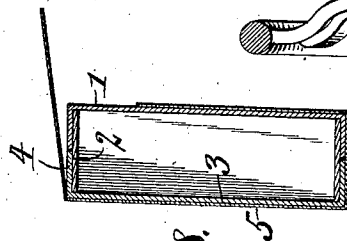


Fig. 18.

Witnesses:
 Richard Sommer.
 John H. Shoemaker

Inventor
 Lyndon C. Palmer
 by *Reyer & Poff*
 Attorneys.

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7 SHEETS-SHEET 7.

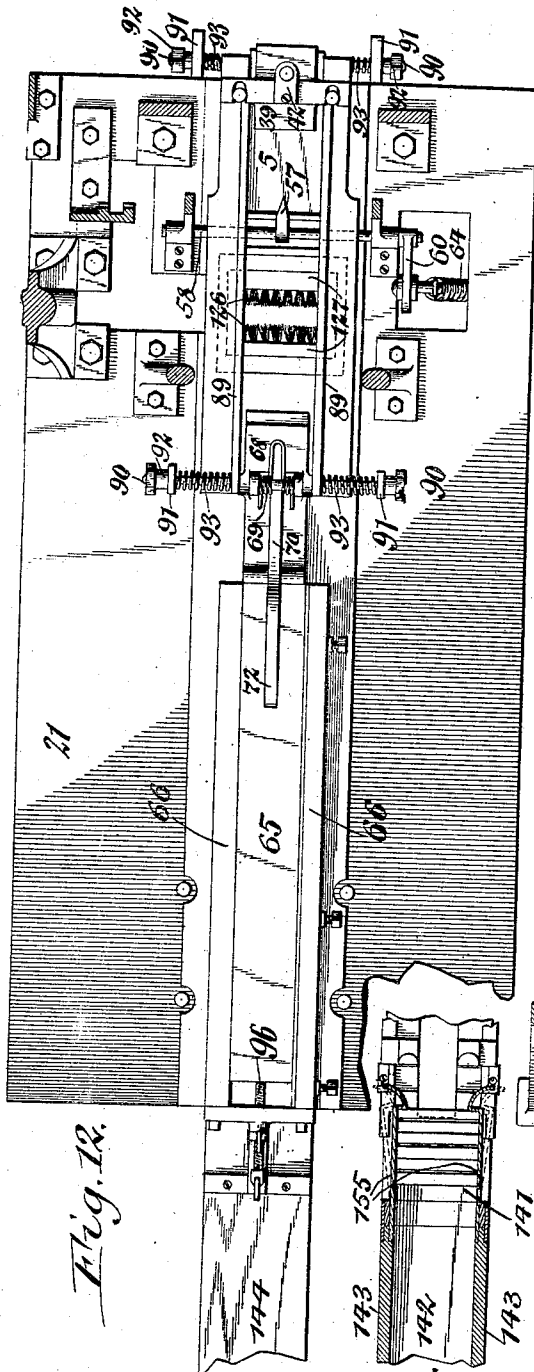


Fig. 12.

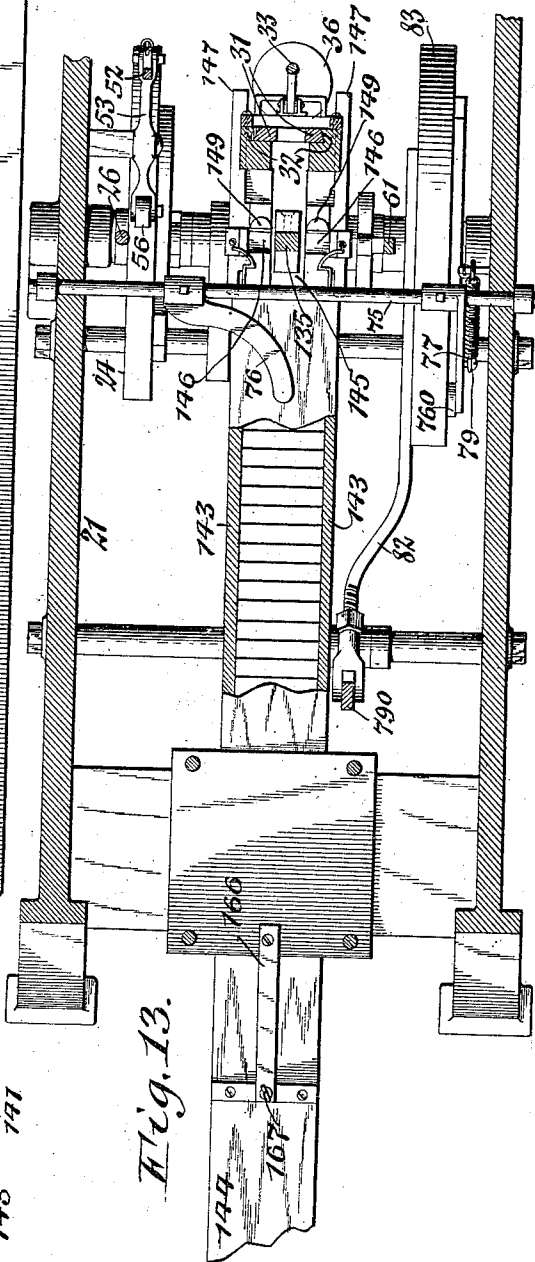


Fig. 13.

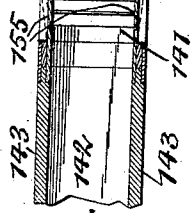


Fig. 14.

Witnesses:-
Richard Sommer,
John H. Shoemaker

Inventor
Lyndon C. Palmer
by *Reverend Pope*
Attorneys.

UNITED STATES PATENT OFFICE.

LYNDON C. PALMER, OF BUFFALO, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO F. N. BURT COMPANY, LIMITED, A CORPORATION OF ONTARIO, CANADA.

LABELING-MACHINE.

1,034,640.

Specification of Letters Patent.

Patented Aug. 6, 1912.

Application filed July 1, 1909. Serial No. 505,388.

To all whom it may concern:

Be it known that I, LYNDON C. PALMER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Labeling-Machines, of which the following is a specification.

This invention relates to a labeling machine which is more particularly designed for applying labels to two part cigarette boxes before the same are filled with goods. In boxes of this character the label is usually applied partly to both sections of the box across the joint between the same on one side thereof, so as to form a hinge connection between these parts, while another part of the label is left free in the form of a flap to permit of securing the same to the box parts across the joint on the opposite side of the same after the box has been filled with goods.

It is the object of this invention to provide a machine whereby labels may be affixed in this manner to the parts of cigarette or similar boxes expeditiously, accurately and economically.

In the accompanying drawings consisting of 7 sheets: Figure 1 is a side elevation of my improved labeling machine. Fig. 2 is a top plan view thereof. Fig. 3 is a front elevation thereof. Figs. 4 and 5 are fragmentary longitudinal sections taken in the correspondingly numbered lines in Fig. 11 and showing some of the cam mechanism which operate movable parts of the machine. Fig. 6 is a vertical longitudinal section, on an enlarged scale, of the machine showing the parts in the position which they occupy when a label has been fed off from the supply pile and is about to be attached to one of the boxes. Fig. 7 is a similar view, the parts being shown in a position which they occupy when a label is about to be carried off from the supply pile of labels. Figs. 8, 9 and 10 are fragmentary vertical longitudinal sections showing different positions of the mechanism, whereby the labels are fed successively from the top of the pile of labels. Fig. 11 is a vertical transverse section in line 11—11, Fig. 6, but showing the box feeding plunger in its uppermost position. Figs. 12, 13 and 14 are horizontal sections in the correspondingly numbered lines in Fig. 6. Fig. 15 is a fragmentary perspective view showing principally the stacking

plunger which removes the boxes from between the feeding plunger and platen after the label has been applied thereto. Fig. 16 is a fragmentary vertical section, on an enlarged scale, of the gripper mechanism whereby the labels are carried off from the pile. Fig. 17 is a fragmentary vertical transverse section through a portion of Fig. 6. Fig. 18 is a vertical section, on an enlarged scale, of a box having a label attached thereto.

Similar characters of reference indicate like parts in the several views.

Although my improved labeling machine may be used for applying labels to various articles, it is more particularly designed for applying labels to two-part cigarette boxes preparatory to filling the same, so that one part of each label is attached to the two parts of a box on one side of the same and across the adjacent part of the joint therebetween, and forms a hinged connection between the same while another part of the label is free and adapted to be adhesively attached to the parts of the box on the opposite side thereof and across the adjacent part of the joint after the box has been filled with cigarettes, and thus seal the same.

This box is preferably of rectangular form, as shown in Figs. 2, 6, 7 and 11, and comprises a lower body 1 provided at its upper edge with a collar or neck 2, and an upper part or cover 3 which fits with its flange 4 over said collar. The label 5 is preferably as wide as the length of the box and of such length that when it is wrapped transversely around the two parts of the box the opposite ends thereof will overlap on one of the flat sides of the box, preferably the bottom, and completely encompass the same. In the operation of the machine, this label is pasted or adhesively attached with its central or intermediate part to the top of the cover and with one end to the rear sides of the cover and body and partly on the bottom of the body, while the opposite end of the label is free and is adapted to be subsequently attached to the front sides of the body and cover and to the remaining part of the bottom of the body of the box.

In its general organization, my improved box labeling machine comprises an upper horizontal supply magazine adapted to contain a horizontal stack or pile of unlabeled boxes, a lower horizontal receiving maga-

zine adapted to receive the boxes after the labels have been applied to the same, means for feeding the boxes successively from the supply magazine, means for feeding labels successively into the path of the boxes issuing from the supply magazine means for adhesively attaching the labels to and wrapping the same successively around the boxes, and means for carrying the boxes successively from the box feeding means to the receiving magazine.

The supply magazine which is adapted to contain the supply of unlabeled boxes, the bodies and covers of which have been previously assembled, preferably comprises a horizontal bottom 6 and two longitudinal side walls 7, 7. The boxes are stacked in this magazine horizontally with the rear edges of the bodies and covers resting on the bottom and the side edges thereof engaging with the side walls of the magazine and the bottoms of the boxes facing forwardly. At its front end, the supply magazine is closed by a transverse front wall or abutment 8 toward which the pile of boxes in the magazine is constantly moved by means of a follower mechanism which, as shown in Figs. 1, 2, 6 and 17, preferably consist of a follower or plate 9 arranged in the magazine and engaging with the rearmost box therein and provided on laterally opposite edges with arms 10 which overhang the side walls of the supply magazine, a pair of flexible draft members or cords 11 each of which is connected at its opposite ends with one arm 10 of the follower and the rear part of one of the side walls of the magazine while its intermediate part passes around a pulley or sheave 12 arranged on the front part of the adjacent side wall of the magazine, and another sheave 13 arranged on the rear part of the same wall, so as to form a forwardly-extending upper loop or bight in this draft cord and a downwardly projecting lower loop or bight in the same, a floating pulley or sheave 14 mounted on the rear loop or the draft end and a weight 15 connected with the floating sheave. As the boxes are fed successively from the front ends of the pile in the supply magazine, the pull of the weights 15 upon the follower 9 through the medium of the draft cords, causes the pile in the supply magazine to be advanced in the same measure as the boxes are fed off, and thereby bring the boxes successively to the front end of the pile.

At its front end adjacent to its front wall, the bottom of the supply magazine is provided with an outlet opening or passage 16 through which the boxes are successively fed downwardly from the front end of the pile in the supply magazine. This feeding of the unlabeled boxes from this supply magazine may be effected by various means

but preferably by the mechanism shown in the drawings which is best shown in Figs. 1, 2, 3, 6, 7 and 11 and which comprises a vertically movable feeding plunger 17 having its path of movement arranged in line with the outlet of the supply magazine and the foremost box therein, vertical side guides 18 arranged on opposite sides of the magazine and engaged by opposite vertical edges of the feeding plunger for directing the movement thereof, a vertically swinging rock lever or arm 19 arranged above the supply magazine and pivoted at its outer end on a bracket or standard 20 rising from the main frame 21 or stationary part of the machine while its inner end is connected by an upright link 22 to the upper end of the plunger, a main driving shaft 23 journaled horizontally and transversely in the lower front part of the machine, a disk 24 secured to the driving shaft and provided with a cam 25 and a vertical cam rod 26 connected at its upper end with the plunger arm and provided at its lower end with a pin or roller 27 engaging with the plunger cam. The driving shaft makes one complete rotation in the direction of the arrow, shown in Figs. 1, 6 and 7, during each cycle of operations of the machine and may be operated in any suitable way, for instance, by means of a driving pulley 28 adapted to be connected with the driving shaft by means of a clutch 29, and to receive a driving belt. As the driving shaft rotates, the plunger cam causes the feeding plunger 17 to be reciprocated vertically through the medium of the intermediate connecting mechanism. During each downward stroke of the plunger the same engages with the upper or front edge of the foremost box in the supply magazine and pushes the same downwardly through the outlet opening thereof. During the subsequent upward movement of the plunger the same continues its movement in this direction until its lower edge is above the upper side of the stack of boxes in the supply magazine and when the plunger reaches this position, it clears the front of the stack of boxes in the magazine, and the stack is moved forwardly by the action of the follower mechanism, so that the next box at the front of the pile in the supply magazine is brought against the front of this magazine and over the outlet thereof, so that it is in position to be fed downwardly and discharged from the magazine by the subsequent downward movement of the feeding plunger. The width of the magazine and the distance between the side guides 18 of the plunger is such that the ends of the box engage the same with sufficient friction to prevent displacement of the boxes excepting under the action of the follower mechanism and the feeding plunger. Preparatory to feeding

or discharging each box downwardly from the supply magazine, a label is fed horizontally rearward across the path of the downwardly-moving box and during the continued downward movement of the box, the label is attached thereto and folded or wrapped around the same preparatory to being stacked with the pile of labeled boxes in the receiving magazine. The labels for this purpose are supported in the form of a vertical pile in front of the path of the feeding plunger upon a vertically movable pile-supporting table 30, the top of this pile being in line or substantially so with the position where the boxes first engage their undersides with the labels. These labels are fed successively rearwardly from the top of the pile to the position where they are assembled with successive boxes, and the pile supporting table is gradually and automatically elevated as the labels are fed off from the top of the pile, so as to maintain the latter in the proper position relatively to the feeding-off mechanism. During its vertical movement the label-supporting table is slidably supported by means of an upright slide 31 connected at its upper end with the rear end of the label-table and guided in ways 32 on the adjacent part of the main frame, as shown in Figs. 6, 3, 7 and 13. The upward movement of the label-supporting table is effected by means of a lifting rod 33 extending downwardly from the center thereof, a flexible lifting member or cord 34 which is doubled to form a loop or bight which passes over a roller 35 arranged on an adjacent stationary part of the frame, and which is secured with one of its ends to the lower end of the lifting rod 33 while its other end carries a weight 36, as shown in Figs. 6 and 7. The downward pull of the weight 36 on the cord 34 produces a constant upward pressure on the label supporting table and causes the pile thereon to be raised as the labels are fed off successively from the top thereof. The pile of labels is guided on its laterally opposite sides, so as to prevent sidewise displacement thereof by means of two upright guide walls or plates 37 engaging with laterally opposite sides of the pile of labels and secured or mounted on the adjacent stationary part of the machine. Below the top of the pile, the same is prevented from being moved or displaced rearwardly by means of a stationary rear wall 38 arranged vertically in rear of the pile and engaged by the rear side of the pile of labels, as shown in Figs. 6 and 7. The upward movement of the pile of labels is arrested by an abutment or stop device which is preferably so constructed as to yieldingly resist the upward movement of the pile and produce a slight tension upon the front edge of the uppermost label, preparatory to feeding the same off from the

pile. This yielding tension or friction device preferably consists of a vertically movable tension or friction pin 39 which is guided at its lower end in an opening formed in a stationary plate 40 extending horizontally across the top of the pile at the front end thereof, while its upper end is guided in a socket 41 secured to a bracket 42 rising from the supporting plate. The tension pin 39 is preferably held yieldingly in its depressed position by means of a coil spring 43 surrounding this pin and bearing at its upper end against the socket while its lower end bears against a collar 44 secured to this pin above the supporting plate. This collar also operates as a stop which, upon striking the upper side of the plate 40, serves to limit the downward movement of a tension pin, and thereby prevent the parts from becoming displaced when no labels are on the pile supporting table for engagement with this pin.

Means are provided for separating the uppermost label from the top of the pile preparatory to feeding the same off from the pile and into position for assembling the same with a box which is fed off from the supply magazine. The preferred mechanism for this purpose shown in the drawings is constructed as follows: 45 represents a separator, wiper or separating finger which is preferably constructed of rubber or similar flexible material and which has a vertically vibrating or oscillating movement lengthwise over the top of the pile of labels at the rear end thereof. During its forward movement the separator sweeps against the top of the uppermost label at the rear end thereof from the position shown in Fig. 6 to the position shown in Fig. 9, whereby the rear end of the uppermost label is pushed forwardly and an upward buckle produced in the same, as shown in Fig. 9, thereby separating or loosening this label. During this movement of the separator, forward displacement of its front end is prevented by reason of the pressure upon the same of the spring pin 39 and also by engagement of the front edge of this label with a stop or flange 46 which projects downwardly from the supporting plate 40 along the upper part of the front side of the pile of labels, as shown in Figs. 6, 7, 8, 9 and 10. The separator is secured to the outer section 47 of a jointed rock arm which is pivotally connected with an inner section 48 which latter in turn is secured to a rock shaft 49 extending transversely over the pile of labels and journaled in bearings on the adjacent stationary part of the frame. On opposite sides of the pivotal connection between the two sections of the rock arm, the inner section is provided with stops 50 which limit the rocking movement of the outer section with reference to the inner

section but permit the outer section to change its position sufficiently with reference to the inner section to enable the separator to adapt itself properly to the uppermost label for effecting a reliable separation of the same from the lower labels. After the front end of the uppermost label has been thus buckled, the separating finger or wiper again moves forwardly and upwardly, so as to clear this label, whereby the latter is again permitted to straighten out, as shown in Fig. 10. The rock shaft 49 is preferably operated for producing this oscillating movement of the separating finger by the means shown in the drawings which consists of a gear pinion 51 secured to one end of the rock shaft 49, a reciprocating gear rack 52 meshing with the pinion, a rock lever 53 pivoted on a stationary part of the machine and having one arm connected with the lower end of the gear rack, as shown for instance in Figs. 4, 6, 7 and 13, a spring 54 connecting said gear rack with a stationary part of the machine and operating to raise the same, and a cam 55 formed on the face of the disk 24 and engaging with a roller 56 on the other arm of the rock lever 53 and operating to turn the latter in the direction for lowering the gear rack. After the separator has pushed the rear part of the label backwardly on the pile and buckled the same for effecting a separation thereof, the same is prevented from again reengaging the top of the pile and its rear edge is also lifted into position to be engaged by the means which carry the same from the pile of labels to the place where the label is assembled with a box from the supply magazine. The means for thus preventing reengagement of the rear part of the label with the pile and lifting the same, preferably comprise a vertically-swinging lifter or lifting finger 57 which projects with its free front end over the top of the pile at the rear end thereof while its rear end is secured to a horizontal rock shaft 58 arranged transversely in rear of the pile of labels and journaled in bearings on the adjacent stationary part of the machine. While the separating finger is sweeping forwardly over the uppermost label, the lifting finger is raised out of engagement from the top of the uppermost label, so as to permit the separating finger to withdraw the rear edge of the label forwardly from underneath the lifting finger, as shown in Fig. 9, and after such withdrawal of the label, the lifting finger is depressed upon the next lowermost label of the pile, so that during the subsequent backward movement of the separating finger the rear portion of the label upon again straightening out, will pass over the top of the lifting finger, as shown in Fig. 10. After the sheet has thus straightened out, the separating finger con-

tinues its backward and upward movement, so as to clear the space between the same and the lifting finger and permit the feeding off mechanism to approach the rear edge of the label, and the lifting finger is also raised so as to lift the rear edge of the label into position to permit the feeding off mechanism to grip the same, as shown in Fig. 7. To permit the rear end of the label to again straighten out after being buckled and to pass over the top of the lifting finger, the front or operative end of the latter is tapered or constructed in the form of a knife edge, as shown in Figs. 6 and 10, thereby avoiding the presentation of a shoulder or obstructing face against which the rear edge of the label might engage or become caught and thus prevent such straightening out. The separator or separating finger is provided centrally with a notch or recess 59 which is in line with the lifting finger and permits the separator to swing freely over the pile of labels and the lifting finger without interfering with the latter. The rocking movement of the lifting finger and its shaft is produced preferably by the means which are best shown in Figs. 1, 2, 3, 11 and 12 and which comprise a rock arm 60 secured to one end of the lifting rock shaft, an upright connecting rod 61 connected at its upper end with the rock arm 60, a cam 62 arranged on the main driving shaft and engaging with a roller 63 on the lower part of the rod 61 for raising the lifting finger, and a spring 64 connected with the rod 61 and an adjacent stationary part of the frame and operating to depress the lifting finger.

The preferred means for carrying off the labels successively from the top of the pile to the position where the same are assembled with the boxes is best shown in Figs. 1, 5, 6, 7, 8, 11, 12 and 16, and are constructed as follows: 65 represents a horizontally and lengthwise reciprocating slide or carriage which is arranged below the upper or supply magazine and guided at its opposite longitudinal edges in ways 66 on the adjacent stationary part of the machine. At its front end the slide 65 is provided with a gripper composed of a lower jaw 67 rigidly mounted on the slide and an upper jaw 68 pivoted on this slide and movable vertically toward and from the lower jaw for gripping the rear edge of the uppermost label between the same or to release this label. The lower jaw is bifurcated so that in its foremost position the same can pass along opposite sides of the lifting finger and underneath the elevated rear edge of the uppermost label. The upper jaw is yieldingly held in its closed position by a spring 69 which is preferably constructed in the form of a coil surrounding the pivot of the upper jaw and bears with one end against the up-

per side of the upper jaw while its other end bears against the adjacent part of the gripper slide 65. The upper gripper jaw may be held in its elevated or open position by means of a trigger, pawl or latch which is pivoted to swing vertically on the gripper carrier and has a front arm 70 adapted to engage with the heel 71 of the upper gripper jaw and a rear arm 72, whereby the trigger or latch is operated for releasing its front arm from the upper gripper jaw. A spring 73 preferably interposed between the upper side of a cross piece on the gripper carrier and the underside of the front arm of the trigger or latch operates constantly to turn the trigger in the direction for lifting the front arm thereof when free and engage the same with the heel of the upper gripper jaw and hold the latter in its elevated position. 74 represents a vertically movable shifting pin guided in an opening formed in the stationary part of the machine in such position that when the gripper slide and associated parts are in their rearmost position, the upper gripper jaw will be arranged over the shifting pin, as shown in Fig. 6, and when the gripper slide and associated part are in their foremost position the rear arm of the trigger will be over the shifting pin, as shown in Fig. 7. This shifting pin is raised twice during each cycle of operations of the machine, once when the gripper slide is at the front end of its stroke and again when said slide is at the rear end of its stroke, this movement being preferably effected by means of a horizontal rock shaft 75 journaled transversely in bearings on the stationary part of the machine below the gripper carrier and provided with a rearwardly projecting arm 76 which engages with the lower end of the shifting pin, a depending rock arm 77 secured to one end of the rock shaft 75 and provided with a roller 760, a cam 78 mounted on the main driving shaft and provided with two high faces on substantially diametrically opposite sides of its axis which are adapted to successively engage with the roller of the rock arm 77, whereby the rock arms 76, 77 and rock shaft 75 are turned in the direction for raising the shifting pin at the front and rear ends of the stroke of the gripper carrying slide, and a spring 79 which operates to turn said rock arms and shaft in the direction for permitting the shifting pin to descend when the low faces of the cam 78 are presented to the roller of the rock arm 77 and which is preferably connected at its opposite ends with the rock arm 77 and the main frame of the machine, as shown in Fig. 1. During the forward movement of the gripper carrier, the upper gripper jaw is elevated and held in this position by the front arm of the trigger engaging with the heel thereof, as shown in Fig. 6, this having been effected by the

upward movement of the shifting pin in this position of the gripper slide and the movement of the trigger into engagement with the heel of the upper gripper jaw by means of the spring 73. During the last portion of the forward movement of the gripper slide and the open gripper, the lower jaw passes underneath the rear edge of the uppermost label which has been raised by the lifter, while the upper jaw moves over the rear edge of this label. After reaching this foremost position, the shifting pin 74 is raised by its actuating mechanism, causing the trigger to be turned in the direction for disengaging its front arm from the heel of the upper gripper jaw, thereby permitting the spring 69 to move the upper gripper jaw toward the lower gripper jaw and clamp or grasp the rear edge of the uppermost label between the same, as shown in Fig. 7. The gripper slide now moves rearwardly and withdraws the label held by its gripper from the top of the pile, and moves the same across the path of the next following box which is fed downwardly from the supply magazine. When the gripper slide reaches the rear end of its stroke, the shifting pin 74 is again raised by its operating mechanism for releasing the grip of the upper jaw upon the rear edge of the label, and while thus raised, the front arm of the trigger is lifted by the spring 73 into engagement with the heel of the upper gripper jaw, as shown in Fig. 6, thereby holding the gripper open preparatory to effecting the next forward stroke of the same with the gripper slide. The reciprocating movement of the gripper slide may be effected by various means but preferably by the means which are shown in the drawings and which consists of an upright rock lever 790 pivoted at its lower end on the lower part of the main frame while its upper end is connected by a link 80 with a downwardly projecting lug 81 on the rear part of the gripper slide, a longitudinal shifting rod 82 connected at its rear end with the rock lever 790, and a cam 83 secured to the main driving shaft and engaging with a roller 84 on the shifting rod, as shown in Figs. 1, 5, 6, 7 and 13. In order to enable the jaws of the gripper to obtain a more firm and reliable hold upon the rear edge of the label, the faces of these jaws are preferably provided with a cooperating rib 85 and groove 86, the rib being preferably formed on the lower jaw and the groove in the upper jaw, as shown best in Fig. 16, whereby a slight kink is produced in the rear edge of the label when the gripper jaws close upon the same, thereby insuring a positive feed of the labels and overcoming the resistance which is offered to the movement of the labels from the pile by the pressure of the spring pin 39 against the upper side of

the same. At the back of the face of the lower jaw of the gripper, the same is provided with an upright gage face 87 with which the rear edge of the label engages during the operation of feeding the same from the pile, thereby aiding in placing the labels in the correct position for assembling the same properly with the boxes. In order to prevent the rear edge of the label from getting over the upper side of the gage face, the same is provided with a forwardly-projecting retaining pin or lug 88 between which and the gripper face of the lower jaw the rear edge of the label is received preparatory to being gripped by the upper jaw.

As the labels are carried from the pile supporting table rearwardly into a position across the path of the boxes preparatory to being assembled therewith, these labels are held against lateral displacement by two longitudinal gages or guide bars 89 arranged lengthwise on opposite sides of the path of the labels and adapted to be engaged with the longitudinal edges thereof, thereby insuring proper presentation of the labels to the boxes for producing neat work and accurate assembling of the same. These side bars or gages are capable of lateral adjustment for adapting them accurately to the width of the labels, this adjustment being preferably effected by means of transverse screws 90 secured at their inner ends to the guide or gage bars while their outer ends slide in lugs 91 on the main frame, screw nuts 92 applied to the outer ends of these screws and bearing against the outer ends of said lugs, and a spring 93 surrounding each of the screws and bearing at its opposite ends against the outer side of one of the side guide bars and the supporting lug of the respective adjusting screw. Upon tightening the screw nuts 92, the guide bars are moved outwardly and the springs are compressed, while upon loosening these screw nuts said guide bars are moved inwardly by the springs 93.

In order to permit of accurately setting the gripper slide so that its stroke will be suited to the length of the label which is being applied to the boxes, means are provided for adjusting this stroke. This is preferably effected by making the shifting rod 82 adjustable lengthwise of the rock arm or lever 790 by providing the latter with a longitudinal slot 94 which receives an adjustable pivot pin or screw 95 on the rear end of the shifting rod 82. In making the machine ready, the shifting rod 82 is disconnected or loosened on the rock arm 790 and the gripper slide is moved backwardly against a set screw 96 mounted on an adjacent stationary part of the machine. This screw has previously been set in accordance with the predetermined point at which the grippers shall come to rest with

the label. The shifting rod 82 is then connected at the proper point with the rock arm 790 and thereafter the labels will always be carried by the grippers to the same position for assembling with the boxes.

As each label is fed off from the top of the pile, the intermediate or central part and the front end of the same are coated with paste, glue or other adhesive material for securing the central part of the label to the rear side of the box while the same is in its assembling position; and securing the front end of the label to the underside of the body and the lower part of the front side, while the rear end of the label remains uncoated and is adapted to be secured to the top of the box and upper part of the front side after the goods have been placed in the boxes. The preferred mechanism for thus applying the adhesive successively to the labels which is best shown in Figs. 1, 2, 3, 6 and 7 of the drawings is constructed as follows: 97 represents a pot arranged above and in front of the pile of labels on the stationary part of the machine and adapted to contain a supply of glue, paste or other suitable adhesive. Within the rear part of this paste box and rotating with its lower part in contact with the adhesive therein is a vertically rotating paste supplying roller 98 which is mounted on a horizontal shaft 99 journaled transversely in bearings on the glue pot. On the front or lifting side of the paste supplying roller the same is engaged by a regulating roller 100 which is adapted to remove the excess of paste from the supply roller and thus regulate the amount of glue or paste which is delivered to the labels. The shaft of this regulating roller is journaled in bearings 101 which are movable in stationary guides 102 toward the supply roller and are engaged on the front sides by means of adjusting screws 103 mounted on adjacent stationary parts carried by the glue pot. By tightening or loosening these screws, the pressure of the regulating roller against the supply roller may be varied to suit the amount of paste or glue which the supply roller is to lift from the glue pot. On its upper rear side the supply roller is engaged by a transfer roller 104 which is mounted on the horizontal transverse shaft 105 journaled in bearings 106 which are movable horizontally in longitudinal guides 107 formed on side pieces of the glue pot and are engaged by means of screws 108 mounted on said side pieces for pressing the transfer roller against the supply roller. The supply roller, regulating roller and transfer roller are caused to turn in unison in the direction indicated by the arrows in Figs. 1 and 6 by means of a gear wheel 109 secured to one end of the shaft of the supply roller and meshing with a pinion 130

110, and a gear wheel 111 on the corresponding ends of the shafts of the regulating roller and the transfer roller. Motion is derived from the main driving shaft for turning the above described rollers of the paste supplying mechanism by means of a chain belt 112 passing around a large sprocket wheel 113 on the main driving shaft and a small sprocket wheel 114 on the opposite end of the shaft of the glue supplying roller, as shown in Figs. 2 and 3. 115 represents a glue or paste delivering roller which vibrates vertically and engages alternately with the underside of the glue transfer roller and the central part of the top of the pile labels. This roller is carried on the rear ends of a pair of vertically swinging rock arms 116 which are secured at their front ends to a horizontal rock shaft 117 journaled transversely on a stationary part of the machine adjacent to the lower front end of the glue pot. The rock shaft is operated for effecting the described vibrating movement of the delivery roller by means of a rock arm 118 arranged on one end of the delivery rock shaft, a rock lever 119 on the main frame having its front arm connected by an upright link or rod 120 with the arm 118 on the delivery rock shaft, a spring 121 connecting the rear arm of the rock lever 119 with the main frame and operating to turn the same and the parts connected therewith in the direction for moving the glue delivery roller from the top of the pile of labels to the transfer roller, and a cam 122 secured to the main driving shaft and engaging with a roller 123 on the rear arm of the rock lever 119 and operating to shift the same and the parts connected therewith in the direction for moving the glue delivery roller from the transfer roller to the top of the pile of labels. While the delivery roller is in its elevated position and in contact with the underside of the transfer roller, as shown in Figs. 1 and 6, it is rotated by contact with the transfer roller and receives the glue which the latter has received by contact with the supply roller. After the delivery roller has been thus coated with glue, the same is lowered upon the central part of the uppermost label of the pile, this occurring immediately after the rear part of the uppermost label has been doubled and again straightened out, so that this label upon being subsequently withdrawn rearwardly from the top of the pile by the gripper mechanism will be drawn with its central and front part underneath the glue delivery roller, as shown in Fig. 8 and receive a coating of glue or paste therefrom. After the upper label has been thus drawn rearwardly in contact with the delivery roller to coat the central and front part of the label, this delivery roller is again elevated

into contact with the transfer roller for receiving a supply of glue for coating the next following label withdrawn from the pile. While the label is arranged transversely across the path of the descending box with which the same is to be assembled, this label is supported on its underside by means of a vertically movable platen 124 which is arranged vertically in line with the path of movement of the box feeding plunger. The movement of this platen is so timed that it remains momentarily at rest underneath the fed-off label and while the box is being fed downwardly against the label and when the under or advancing side of the box has engaged the label, the platen begins its downward movement and moves in this direction in unison with box feeding plunger until the box and the label associated therewith have reached the position where the assembled box and label are discharged from a position between the feeding plunger and platen to the receiving magazine. While the box and label are being thus carried downwardly, they are firmly gripped between the feeding plunger and platen and that part of the label engaging with the outer sides of the cover and body are firmly pressed together and caused to be united. The platen is of the same length as the width of the label in order to apply pressure against the full width of the same. The face of this platen is provided with a facing or cushion 125 of rubber or similar flexible material, whereby a yielding pressure is produced on the lower side of the box, whereby the box and label may be gripped between the feeding plunger and platen without necessitating absolute accuracy in the relative position between the feeding plunger and platen. The yielding face of the platen also permits the same to adapt itself to any irregularities or unevenness on the lower side of the box and causes the respective part of the label to be reliably and smoothly attached thereto throughout its entire surface. As the box and label are carried downwardly between the feeding plunger and platen, the front end of the label is folded upwardly and adhesively attached to the vertical bottom or front side of the box, and the intermediate part and rear end of the label are folded upwardly against the vertical rear side of the box, the paste coated intermediate portion being adhesively secured to this side of the box while the uncoated upper rear end of the label projects upwardly above the upper side of the box in the form of a loose flap. This folding of the rear end and the intermediate and rear end of the label relatively to the box and the pressing of the front end and intermediate parts against the flat front and rear sides of the box is preferably

effected by means of front and rear folding and pressing members arranged in front and rear of the path of the label, box, feeding plunger and platen immediately below the position where the box and label are assembled and separated from each other by an intervening passage or throat through which the platen, feeding plunger, label and box are moved downwardly. These folding and pressing members preferably consist of two brushes the bristles 126 of which face the front and rear sides of said throat while their stocks 127 are secured in an opening formed in the main frame or stationary part of the machine immediately in rear of the top of the pile of labels. As the box and label are carried downwardly between the feeding plunger and platen, those parts of the label in front and in rear of the box are folded or turned upwardly into a vertical position and pressed against the front and rear sides of the box by the wiping action of the bristles of the brushes. Inasmuch as these brushes yield, they readily adapt themselves to any unevenness or irregularities on the front and rear surfaces of the box and thereby cause the front and rear pasted parts of the label to be uniformly and smoothly attached to the box over the entire surface covered by the pasted parts of the label. After the box with the label folded upon and attached thereto passes downwardly beyond the folding and pressing brushes, the front end of the label and the intermediate part may be subjected to additional pressure if this is found necessary, this being effected by a secondary pressing device which preferably comprises front and rear pressing plates 128, 129, which are arranged in front and in rear of the path of the box and label below the upper or primary folding and pressing device, and which are adapted to engage with the front and rear sides of the label and press the same firmly against the corresponding sides of the box during the downward movement of same between the secondary pressing plates. The latter preferably operate yieldingly upon the label of the box, so as to allow for any variations in the thickness of the box and label and enable the secondary pressing device to adapt itself to the box and label for properly pressing the same. For this purpose the rear pressing plate is preferably mounted rigidly on an adjacent stationary cross bar 130 of the frame while the front pressing plate is mounted on a cross bar 131 which is capable of longitudinal movement in the machine toward and from the rear pressing plate, the same being guided by means of screws 132 arranged on the frame and passing through longitudinal slots 133 in the front cross bar and being yieldingly held in its rearmost position by means of

springs 134 interposed between the front side of the front bar and adjacent stationary part of the machine, as shown in Figs. 6, 7 and 8. After the assembled box and label while moving downwardly with and between the feeding plunger and platen have passed below the secondary pressing device, the platen completes its downward movement and remains at rest while the feeding plunger immediately ascends into its highest position preparatory to feeding downward the next box from the supply magazine. The platen remains in this depressed position until the mechanism which removes the labeled box from the platen into the receiving magazine has completed its operation, and then the platen again rises into a position substantially in line with the upper side of the primary folding brushes and below the transverse path of the labels as the latter are moved from the supply pile across the downward path of the boxes. The mechanism whereby the platen is moved in the manner described may be variously constructed but that shown in the drawings is suitable for the purpose and comprises an upright narrow slide 135 which has its lower part constructed in the form of a rod which is guided in a way 136 on the main frame while its intermediate part is slotted and receives the main driving shaft so as to be guided thereon and has its upper end connected centrally with the underside of the platen. This platen supporting slide is reciprocated vertically by means of a transverse rock lever 137 pivotally connected at its inner end with the lower part of the platen slide while its outer end is pivoted on the main frame, an upright shifting rod 138 connected at its lower end with the platen operating lever, a cam 139 formed on the disk 24 and operating to depress the connecting rod and the platen through the medium of the slide 135 and lever 137, and a spring 140 which operates to raise the platen and which is preferably connected at one end with the lever 137 and at its opposite end with the main frame, as shown in Figs. 7 and 11.

The receiving magazine in which the labeled boxes are stacked is arranged horizontally in rear of the space between the secondary pressing device and the platen in the lowermost position thereof and comprises a horizontal longitudinal bottom 141, 142, two upright longitudinal side walls 143 rising from opposite sides of the bottom and a horizontal longitudinal top 144 connecting the side walls. The upper side of the bottom of the receiving magazine is horizontally in line with the upper side of the platen in the lowermost position thereof and is provided at its front end with a longitudinal slot 145 through which the platen slide moves vertically and on transversely

opposite sides of this slot with notches or recesses 146 which are adapted to receive the ends of the platen in the lowermost position thereof.

5 The mechanism whereby the labeled boxes are successively removed from the platen and delivered into the receiving magazine is preferably constructed as follows: In front of the receiving magazine is arranged a
10 horizontally and longitudinally movable packing plunger which comprises two longitudinal side pieces 147 guided on the opposite outer sides of the front part 141 of the bottom of the receiving magazine, a
15 cross piece or yoke 148 connecting the side pieces 147 below the bottom part of the receiving magazine, and two push fingers, wings or horns 149 projecting inwardly from the upper side of the side pieces and
20 separated from each other by an intervening space which is vertically in line with the slide of the platen. During the downward movement of the labeled box together with the platen and feeding plunger and until
25 these parts reach their lowermost position, the packing plunger is in its foremost position so that its push fingers or wings are arranged in front of the labeled box when the same reaches the end of its downward movement with the feeding plunger and platen.
30 Upon reaching this position and after the feeding plunger has commenced its upward movement, the labeled box is engaged on its front side by the push fingers of the packing plunger which now moves rearwardly. The
35 extent of this movement of the packing plunger is such that it removes the labeled box from the upper side of the platen and pushes the same into the front or inlet end
40 of the receiving magazine. After having delivered the labeled box in this manner into the receiving magazine, the packing plunger again moves forwardly into its foremost position and the platen is raised into
45 its uppermost position, preparatory to receiving the next following box and label. The mechanism whereby this reciprocating movement of the packing plunger is obtained preferably comprises an upright rock
50 lever 150 pivoted at its lower end on the main frame and connected at its upper end by a link 151 with the yoke of the packing plunger, a shifting rod 152 connected at its rear end with the upright lever 150 and a
55 cam 153 secured to the main driving shaft and engaging with a roller 154 on the front part of the shifting rod. As the labeled boxes are delivered successively into the front end of the receiving magazine, the
60 preceding boxes are pushed rearward by successive steps as the new incoming boxes are added to the front of the stack therein. As each labeled box is pushed rearwardly into the receiving magazine the same is pre-
65 vented from again springing forward as the

packing plunger is withdrawn forwardly by means of a detent device which is shown in Figs. 7, 14 and 15 and which preferably comprises two longitudinal springs 155 arranged lengthwise on opposite vertical sides
70 of the inlet at the front of the receiving magazine and each secured at its rear end to the adjacent side wall of the receiving magazine while its front end is provided on its inner side with a rearwardly facing
75 shoulder 156 and a forwardly facing incline 157 arranged in front of the shoulder. As a box is pushed rearwardly by the packing plunger, the vertical sides of the box by engaging the inclines on the detent springs
80 deflect the latter and hold the same apart until the front side of the box passes rearwardly beyond the shoulders of these detent springs when the latter owing to their
85 resilience move their shoulders in front of the box and thereby prevent the same from moving forwardly during the subsequent forward movement of the packing plunger. The distance between the bottom and top of
90 the receiving magazine is greater than the height of the box but less than the added height of the box and the upwardly extending loose end or flap of the label thereon, and the underside of the top of the receiving
95 magazine at its front or inlet end is beveled downwardly, as shown at 158 in Fig. 7. By means of this construction, the loose rear end or flap of the label upon pushing the box into the receiving magazine is
100 gradually bent forwardly and downwardly over the upper side of the box, as shown in Figs. 6 and 7. To complete this forward bending of the loose end or flap of the box and cause the same to be creased at the upper
105 rear corner of the box, a pressing device is provided whereby pressure is applied to the opposite upper and lower sides of the boxes. This pressing device preferably consists of a presser block 159 movable vertically
110 through an opening formed in the bottom of the receiving magazine and provided on its upper side with an elastic facing 160, a vertically movable cross head or slide 161 upon which said presser block rests loosely and which is guided upon upright rods 162
115 secured to the main frame, a pair of upright toggle links 163 pivotally connected at their opposing ends while their extremities are pivoted respectively to the underside of the cross head 161 and a stationary support on
120 the lower part of the machine, and a connecting rod 164 connected at its rear end with the opposing ends of the toggle links while its front end is connected with the rock lever 150. As the rock lever 150 oscillates and actuates the packing plunger, the
125 toggle links are alternately folded and straightened and cause the presser block to rise and fall. In the lowermost position of the presser block, the upper side of its elastic
130

facing is flush with the upper side of the bottom of the receiving magazine, as shown in Fig. 7. As the boxes are pushed rearward in the receiving magazine by the packing plunger, the same are moved successively over the presser block and as the packing plunger moves forward the presser block rises and lifts the boxes resting thereon, so that their upper sides and the forwardly overhanging label flaps thereof are pressed against the underside of the top of the receiving magazine, whereby these labeled ends or flaps are creased at the upper rear box corner, thereby permitting of more convenient packing of these boxes for storage or transportation and also facilitating the pasting of these loose ends or flaps across the front sides of the covers and bodies and the underside of the latter after the boxes have been filled with cigarettes or other goods. The presser block is equal in length to a plurality of the boxes, so that the same box and its label flap are subjected several times to the creasing operation of this presser block from the time that the box and its labels are first acted upon by the presser block to the time that the boxes escape therefrom, thereby insuring reliable creasing of the box flaps. The rear end of the receiving magazine is open and the labeled boxes are discharged successively from the same into a suitable receptacle provided for this purpose.

It has been found by experience that the labeled boxes sometimes become jammed in the receiving magazine and interfere with the operation of the machine. To permit of quickly and conveniently removing the obstruction in the receiving magazine, the same is so constructed and mounted in a machine that it can be quickly removed from the machine and restored in the same. This is preferably accomplished by constructing the bottom of the receiving magazine in two sections 141, 142 which are detachably connected by means of bolts 165 or otherwise, the front section 141 remaining permanently in the machine while the rear section 142 is permanently connected with the side walls and top of the receiving magazine and is removable therewith from the machine. The removable parts of the receiving magazine are further held in place while the machine is in operation by means of a bracket 166 projecting rearwardly from the main frame and connected with the rear part of the top of the receiving magazine by a screw 167, as shown in Figs. 6 and 13, or by any other suitable means.

To permit of removing the presser block from the machine with the receiving magazine but preventing the same from becoming detached from this magazine when lifted from the cross head, retaining means are provided which preferably consist of hooks

or notched arms 168 projecting forwardly and rearwardly from the lower part of the presser block and adapted to engage with cross rods or supports 169 mounted upon the adjacent part of the receiving magazine. These supporting rods are engaged by the hooks of the presser block in the lowermost position thereof, and when the receiving magazine is removed from the machine and the presser block is lifted from the cross head, the cooperating hooks and supporting rods hold the presser block in position relatively to the receiving magazine, so that the same will not fall apart when clearing the magazine, thereby facilitating handling of the receiving magazine when the same becomes clogged and avoiding prolonged stoppage of the machine for the purpose of clearing this magazine.

I claim as my invention:

1. In an apparatus of the character described, in combination, means to move an article, means to present a label to the path of movement of the article, means to positively move the article against the label and to fold the same thereon, and means to secure a major portion of the label to the article and leave a free unsecured end.
2. In an apparatus of the character described, in combination, means to move an article, means to place a label in the path of the article, means to glue a portion of the label, and means to fold the glued portion of the label on the article, thereby securing a portion of the label to the article and providing a projecting unglued portion.
3. In an apparatus of the character described, in combination, means to move an article, means to present a label to the path of movement of said article, means to glue a portion of the label, and means to move the article against the label and fold the glued portion of the same therearound, thereby securing a portion of the label to the article and providing an unglued end portion.
4. In an apparatus of the character described, in combination, means for pasting a label over a portion thereof, means for holding the label on an article leaving one free end only, and means for creasing the label between the pasted and unpasted portions.
5. In an apparatus of the character described, in combination, means for pasting a label over a portion thereof, means for folding the label on an article and providing an unpasted foldable portion, and means for creasing the label at the margin of the pasted portion.
6. In an apparatus of the character described, in combination, means for feeding articles successively, means for feeding labels and securing them thereto over a portion thereof, and means for creasing the

labels between the secured and unsecured portions, leaving a single free unfolded end.

7. In an apparatus of the character described, in combination, means for folding a label over an article, means for pressing the folded portion thereagainst and securing the same therein, leaving a free foldable portion, and means for creasing the label at the margin of the pressed part.

8. In an apparatus of the character described, in combination, means to support a label and a two part box, and automatically cooperating means to attach the label to the box across the joint and provide a freely extending end portion.

9. In an apparatus of the character described, in combination, means to support a label and a two part box, and means adapted to glue the label to the box across the joint and provide a free unglued portion.

10. A machine for labeling a two part box comprising means for feeding said box, and means for feeding a label and attaching a part of the same to said box to join the parts together.

11. A machine for labeling a two part box comprising means for feeding said box, and means for feeding a label and attaching one end of the same to one side of the parts of the box across the adjacent part of the joint between the same while leaving the other end thereof free for subsequent attachment to the opposite side of the parts of the box and across the adjacent part of the joint between the same.

12. A box labeling machine comprising a supply magazine adapted to contain a stack of unlabeled boxes, means for feeding the boxes successively from the supply magazine, means for feeding labels across the path of the boxes issuing from the magazine and in position to be engaged by the boxes and to be carried along by the boxes after being thus engaged, a platen which supports the labels while the boxes are engaged with the same and which moves with the boxes and labels and supports the same to the end of the feeding movement of the box feeding means, and means for actuating said platen comprising a reciprocating slide carrying said platen, a lever connected with said slide, and a cam operating said lever.

13. A box labeling machine comprising a supply magazine adapted to contain a stack of unlabeled boxes, means for feeding the boxes successively from the supply magazine, means for feeding labels across the path of the boxes issuing from the magazine and in position to be engaged by the boxes and to be carried along by the boxes after being thus engaged, a platen which supports the labels while the boxes are engaged with the same and which moves with the boxes and labels and supports the same to the end of

the feeding movement of the box feeding means, a receiving magazine adapted to receive the labeled boxes, and a stacking plunger operating to carry the labeled boxes from between the box feeding means and platen to the receiving magazine.

14. A box labeling machine comprising a supply magazine adapted to contain a stack of unlabeled boxes, means for feeding the boxes successively from the supply magazine, means for feeding labels across the path of the boxes issuing from the magazine and in position to be engaged by the boxes and to be carried along by the boxes after being thus engaged, a platen which supports the labels while the boxes are engaged with the same and which moves with the boxes and labels and supports the same to the end of the feeding movement of the box feeding means, a reciprocating slide carrying the platen, a receiving magazine arranged adjacent to the place where the platen ends its movement with the boxes and labels, and a bifurcated reciprocating packing plunger adapted to pass along opposite sides of the platen and its slide and carry the boxes from between the platen and the box feeding means to said receiving magazine.

15. A box labeling machine comprising a supply magazine adapted to contain a stack of unlabeled boxes, means for feeding the boxes successively from the supply magazine, means for feeding labels across the path of the boxes issuing from the magazine and in position to be engaged by the boxes and to be carried along by the boxes after being thus engaged, a platen which supports the labels while the boxes are engaged with the same and which moves with the boxes and labels and supports the same to the end of the feeding movement of the box feeding means, a reciprocating slide carrying the platen, a receiving magazine arranged adjacent to the place where the platen ends its movement with the boxes and labels, a bifurcated reciprocating packing plunger adapted to pass along opposite sides of the platen and its slide and carry the boxes from between the platen and the box feeding means to said receiving magazine and means for actuating the packing plunger comprising a rock lever connected with the packing plunger, a connecting rod connected with said lever, and a cam operating on said rod.

16. A box labeling machine comprising a supply magazine adapted to contain a stack of unlabeled boxes, means for feeding the boxes successively from the supply magazine, means for feeding labels across the path of the boxes issuing from the magazine and in position to be engaged by the boxes and to be carried along by the boxes after being thus engaged, a platen which supports the labels while the boxes are engaged with the same and which moves with

the boxes and labels and supports the same to the end of the feeding movement of the box feeding means, a receiving magazine adapted to receive the labeled boxes, a packing plunger operating to carry the labeled boxes from between the box feeding means and platen to the receiving magazine, and a detent device for permitting the boxes to move forward into the stacking magazine but preventing backward movement of the same therein.

17. A box labeling machine comprising a pair of opposing folding and pressing members which are separated to form a passageway or throat between them, a support for a pile of labels, means for applying paste to a portion of each label, means for feeding a pasted label across said throat, and means for feeding a box against said label and with the latter through said throat to paste the label to the box and provide a projecting unpasted end of the label, a receiving magazine comprising an inclined wall, means for feeding the box into the magazine past said wall to fold the unpasted portion of the label, and means to press the folded portion of the label while in the magazine.

18. A box labeling machine comprising, in combination, a pair of opposing folding and pressing members which are separated to form a passageway or throat between them, a support for the pile of labels, means for applying paste to a portion of each label, means for feeding a pasted label across said throat, means for feeding a box against said label and with the latter through said throat to paste the label to the box and provide a projecting unpasted end of the label, a platen movable through the throat and adapted to support the label and box during their movement between said folding and pressing members, a receiving magazine comprising an inclined wall, means for feeding the box into the magazine past said wall to fold the unpasted portion of the label, and means to press the folded portion of the label while in the magazine.

19. A box labeling machine comprising, in combination, means for folding labels on boxes, and attaching the same thereto leaving projecting ends, and means for successively stacking said labeled boxes in a magazine, with the projecting portions of the labels successively overlapping.

20. A box labeling machine comprising a primary folding and pressing device comprising two brushes which oppose each other and form a throat between the same, a secondary pressing device composed of two opposing plates forming a throat between them in line with the first mentioned throat, means for feeding a label across the throat between said brushes, and means for feeding a box against said label and through said throats with the label.

21. A box labeling machine comprising a primary folding and pressing device comprising two brushes which oppose each other and form a throat between the same, a secondary pressing device composed of two opposing plates forming a throat between them in line with the first mentioned throat, one of said plates being stationary while the other is yieldingly supported, means for feeding a label across the throat between said brushes, and means for feeding a box against said label and through said throats with the label.

22. A box labeling machine comprising a pair of folding members forming a throat between them, means for feeding a label across said throat comprising a slide movable across said throat, a gripper having a fixed jaw mounted on the slide, a movable jaw pivoted on the slide, a spring for yieldingly holding said movable jaw in its closed position, a trigger pivoted on the slide and adapted to hold said movable jaw in its open position and to be released therefrom to permit said movable jaw to close, and means for feeding a box against the label and through said throat with said label.

23. A box labeling machine comprising a pair of folding members forming a throat between them, means for feeding a label across said throat comprising a slide movable across said throat, a gripper having a fixed jaw mounted on the slide, a movable jaw pivoted on the slide, a spring for yieldingly holding said movable jaw in its closed position, a two armed trigger pivoted on said slide and adapted to engage one of its arms with a shoulder on the movable jaw for holding the same open, and a movable releasing pin which is guided on a stationary support and which is adapted in one position of the slide to engage with the movable jaw and open the same and in another position of said slide to engage with the other arm of said trigger and release the same from the movable jaw to permit closing of the latter, and means for feeding a box against said label and through said throat with said label.

24. A box labeling machine comprising a pair of folding members forming a throat between them, means for feeding a label across said throat comprising a slide movable across said throat, a gripper having a fixed jaw mounted on the slide, a movable jaw pivoted on the slide, a spring for yieldingly holding said movable jaw in its closed position, a two armed trigger pivoted on said slide and adapted to engage one of its arms with a shoulder on the movable jaw for holding the same open, a movable releasing pin which is guided on a stationary support and which is adapted in one position of the slide to engage with the movable jaw and open the same and in another position

of said slide to engage with the other arm of said trigger and release the same from the movable jaw to permit closing of the latter, and means for operating said pin comprising a rock lever engaging with said pin, and a cam for operating said lever and means for feeding a box against said label and through said throat with said label.

25. A box labeling machine comprising a pair of folding members forming a throat between them, means for feeding a label across said throat comprising a slide movable across said throat, a gripper having a fixed jaw mounted on the slide, a movable jaw pivoted on the slide, an adjusting screw for adjusting the stroke of said slide, and means for closing the gripper on one side of said throat and opening the same on the other side of said throat, and means for feeding a box against said label and through said throat with said label.

26. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, means for yieldingly raising said table, a vertically movable retaining member with which the upper side of said pile of labels engages, a spring which operates to hold said retaining member yieldingly in its depressed position, and a movable gripper adapted to engage successively with the uppermost labels of said pile and move the same into position for assembling with the boxes.

27. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, a vibrating separator adapted to engage successively with the uppermost labels of the pile at the rear end thereof and separate the same from the lower labels, an abutment engaging with the front edges of the upper labels, means for vibrating said separator comprising a horizontal rock shaft arranged transversely above the pile of labels and carrying said separator, a pinion arranged on said shaft and a vibrating gear rack meshing with the pinion, and a gripper for carrying the uppermost labels successively from the pile to the means which assemble the same with the boxes.

28. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, a vibrating separator adapted to engage with the uppermost label of the pile at the rear end thereof and buckle the same during its forward movement and permit the label to again straighten out during its rearward movement, a lifter over which the rear end of the label passes upon straightening out after being buckled and whereby

this end of the label is lifted after straightening, and a movable gripper which engages with the rear end of the label while raised by said lifter and which carries said label to said means which assemble the same with a box.

29. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, a vibrating separator adapted to engage with the uppermost label of the pile at the rear end thereof and buckle the same during its forward movement and permit the label to again straighten out during its rearward movement, a vertically swinging lifter pivoted at its rear end and having a tapering front edge which overhangs the top of the pile at the rear end thereof, means operating to depress the front edge of said lifter after the uppermost label has been buckled forwardly by said separator to permit the label to subsequently straighten rearwardly over the lifter and to raise said lifter together with the label resting thereon after the latter has straightened, and a gripper which engages with the rear edge of the label while the same is elevated and carries the same to said means which assemble it with a box.

30. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, a vibrating separator adapted to engage with the uppermost label of the pile at the rear end thereof and buckle the same during its forward movement and permit the label to again straighten out during its rearward movement, a vertically swinging lifter pivoted at its rear end and having a tapering front edge which overhangs the top of the pile at the rear end thereof, means operating to depress the front edge of said lifter after the uppermost label has been buckled forwardly by said separator to permit the label to subsequently straighten rearwardly over the lifter and to raise said lifter together with the label resting thereon after the latter has straightened, means for actuating said lifter comprising a rock shaft carrying said lifter, a rock arm connected with the shaft and a cam operating said arm, and a gripper which engages with the rear edge of the label while the same is elevated and carries the same to said means which assemble it with a box.

31. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a table adapted to support a pile of labels, means for carrying labels successively from said pile to said means which assemble the same with said boxes, guides between which the labels move from said pile to said assembling means,

and means for adjusting said guides laterally relatively to the path of the labels.

32. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a table adapted to support a pile of labels, means for carrying labels successively from said pile to said means which assemble the same with said boxes, guides between which the labels move from said pile to said assembling means and means for adjusting said guides laterally relatively to the path of the labels, comprising adjusting screws connected with said guides and mounted in supports, and springs arranged between said guides and supports and operating to hold the guides yieldingly in position.

33. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a table adapted to support a pile of labels, means for carrying labels successively from said pile to said means which assemble the same with said boxes, means for applying paste to the front ends only of said labels comprising a paste carrier movable toward and from the top of the pile of labels and means for separating the front ends of the labels from the pile comprising a member adapted to be interposed between the topmost label and the pile.

34. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a table adapted to support a pile of labels, means for carrying labels successively from said pile to said means which assemble the same with said boxes, means for applying paste to the front ends only of said labels comprising a paste carrier movable toward and from the top of the pile of labels, and means for separating the front ends of the labels from the pile comprising a movable finger adapted to be interposed between the topmost label and the pile.

35. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, a table adapted to support a pile of labels, means for carrying labels successively from said pile to said means which assemble the same with said boxes, and means for applying paste to the front ends only of said labels comprising a paste supply pot, a supply roller adapted to remove the paste from said pot, a transfer roller engaging with the supply roller, a delivery roller movable from the transfer roller to the uppermost labels of the pile, and a regulating roller engaging with the supply roller.

36. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, and a

receiving magazine which receives said assembling boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels.

37. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, and a presser for moving said boxes endwise in said magazine.

38. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, and a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine.

39. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine, and a toggle mechanism for operating said presser.

40. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine, and a toggle mechanism for operating said presser comprising a pair of toggle links which have their opposing ends pivotally connected with each other while their extremities are

pivottally connected respectively with the presser and a stationary support, a rock lever connected with the toggle links, and a cam for operating said lever.

41. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine, a reciprocating slide which loosely supports said presser, stationary guides for said slide, means for actuating said slide, and means for detachably connecting said magazine with the associated parts of the machine.

42. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine, a reciprocating slide which loosely supports said presser, stationary guides for said slide, means for actuating said slide, means for detachably connecting said magazine with the associated parts of the machine and means for retaining the presser in an assembled condition with said magazine when the latter is removed from the machine.

43. A box labeling machine comprising means for feeding boxes, means for feeding labels, means for adhesively attaching one end of each label to one part of a box while its opposite end remains unattached, a receiving magazine which receives said assembled boxes and labels and which has opposing walls one of which is engaged by the attached ends of the labels while the other is engaged by the unattached ends of the labels, a vibrating presser projecting through one side of the magazine and adapted to press the boxes endwise against the opposite side of the magazine, a reciprocating slide which loosely supports said presser, stationary guides for said slide, means for actuating said slide, means for detachably connecting said magazine with the associated parts of the machine, and means for retaining the presser in an assembled condi-

tion with said magazine when the latter is removed from the machine comprising hooks arranged at opposite ends of the presser and a pair of supporting rods connected with the magazine and adapted to be engaged by said hooks.

44. In an apparatus of the character described, in combination, means adapted to support and feed detachable elements of a two-part box and means for pasting a label strip to the elements to hinge said elements together.

45. In an apparatus of the character described, in combination, means adapted to support in juxtaposition detachable elements of a two-part box, means for supporting a label, means for applying paste to the label, and means for applying the label to the elements of the box so as to provide a hinge therefor.

46. A box labeling machine comprising means for feeding boxes, means for assembling labels with said boxes, means adapted to support a supply of label material, gripper mechanism adapted to engage the label material and move the same into position for assembly with the boxes, and mechanism adapted to reciprocate said gripper mechanism comprising means adapted to adjust the stroke of said gripper mechanism.

47. A box labeling machine comprising, in combination, means for feeding boxes, means adapted to support label material, a reciprocating slide, a gripper carried thereby and adapted to feed the label material into the path of the boxes for assembly therewith, a rock lever, a link connection between the lever and slide, a cam, a shifting rod operatively connected to the cam, and means to adjustably pivotally connect the shifting rod and the rock lever.

48. A box labeling machine comprising a supply magazine adapted to contain a stack of boxes, means for feeding the boxes successively from the supply magazine, means for feeding a strip of label material across the path of the boxes issuing from the magazine, means for attaching the strip to the boxes, a stacking magazine comprising a press head movable transversely of the stack, and means adapted to deliver the stripped boxes to the stacking magazine with their adhering surfaces in position to be pressed by said head.

49. In an apparatus of the character described, in combination, means for feeding boxes, means for assembling labels with said boxes, a vertically movable table adapted to support a pile of labels, means comprising a flexible device adapted to elevate the table and permit it to descend, means adapted to apply paste to the upper label of the pile, means adapted to separate the upper label from the lower labels, means adapted to press the end portions of the labels to in-

sure their separation, and a movable gripper for carrying the upper labels successively from the pile to the means which assemble the same with the boxes.

5 50. A box labeling machine comprising in combination, a magazine adapted to contain a horizontal pile of boxes, a follower adapted to press the boxes toward an end of the magazine, a plunger adapted to reciprocate
10 across the path of the boxes in said magazine to feed the boxes therefrom while retaining the immediately succeeding box in the magazine until the plunger has returned to feeding position, a throat comprising
15 flexible walls, guides along which the boxes are fed by the plunger to the throat, a support for a pile of labels, means adapted to yieldingly move the support to present the top label of the pile in a predetermined position, means adapted to separate an end of the
20 top label from the pile comprising a vibrator, means adapted to preserve the separated position of said labels, a paste pot, means adapted to transfer paste from the pot to the top labels, a slide, gripper jaws supported thereby, yielding means to close said jaws, a trigger carried by the slide and adapted to hold the jaws in open position, a pin adapted to govern the opening and closing of said jaws,
30 means adapted to reciprocate the slide to cause the jaws to grip the separated ends of the labels and deposit them across the throat, a platen adapted to reciprocate in the throat, means adapted to reciprocate the plunger and move the boxes from the magazine against the labels and platen, and together with the platen through the throat, whereby the labels are folded around the boxes, a second magazine having a receiving
35 opening in alinement with the position assumed by the boxes after passing the throat, and reciprocatory means adapted to feed the boxes into said second magazine.

45 51. A machine of the character described comprising, in combination, means for feeding boxes, and means for assembling labels

therewith comprising a gripper support, gripper jaws carried thereby one jaw being movable toward and from the other, a trigger adapted to engage the movable jaw and
50 move the same from the other jaw, and a pin adapted to operate the trigger and permit the jaws to close.

52. A machine of the character described comprising, in combination, means for feeding boxes, and means for assembling labels therewith comprising a gripper slide, gripper jaws carried thereby, a spring adapted to press one jaw toward the other, an oscillatory pawl pivotally connected to one jaw
60 and adapted to engage the other, means adapted to cause the pawl to open the jaws and hold the same against movement under the influence of said spring, and means to positively move the pawl to permit the jaws
65 to close.

53. A box labeling machine comprising in combination, an upper relatively stationary supply magazine adapted to contain a horizontal pile of contiguous boxes, a lower
70 relatively stationary receiving magazine in which the boxes are adapted to be stacked horizontally and contiguously, means for successively moving the boxes vertically from said supply magazine to said receiving
75 magazine comprising a movable platen adapted to support the labels and to cooperate in the support of the boxes, means for successively moving labels across the vertical path of the boxes between said supply magazine and said receiving magazine,
80 means for attaching the labels to and wrapping the same around the boxes, and means for pushing the boxes into the receiving magazine.

85 Witness my hand this 29th day of June, 1909.

LYNDON C. PALMER.

Witnesses:

EMMA M. GRAHAM,
ANNA HEIGIS.