

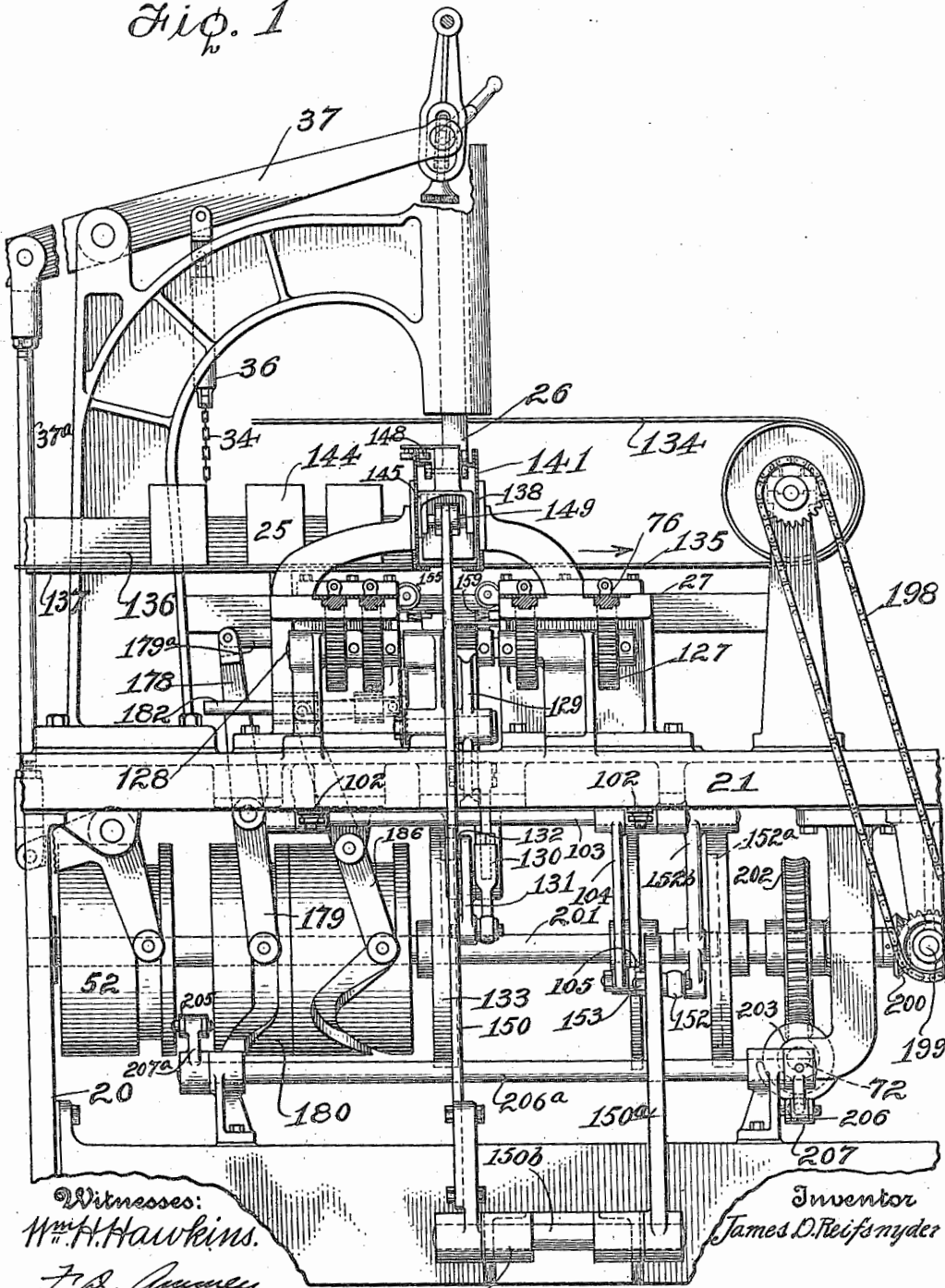
J. D. REIFSNYDER.
 LABEL APPLYING MACHINE.
 APPLICATION FILED MAR. 20, 1915.

1,254,276.

Patented Jan. 22, 1918.

6 SHEETS—SHEET 1.

Fig. 1



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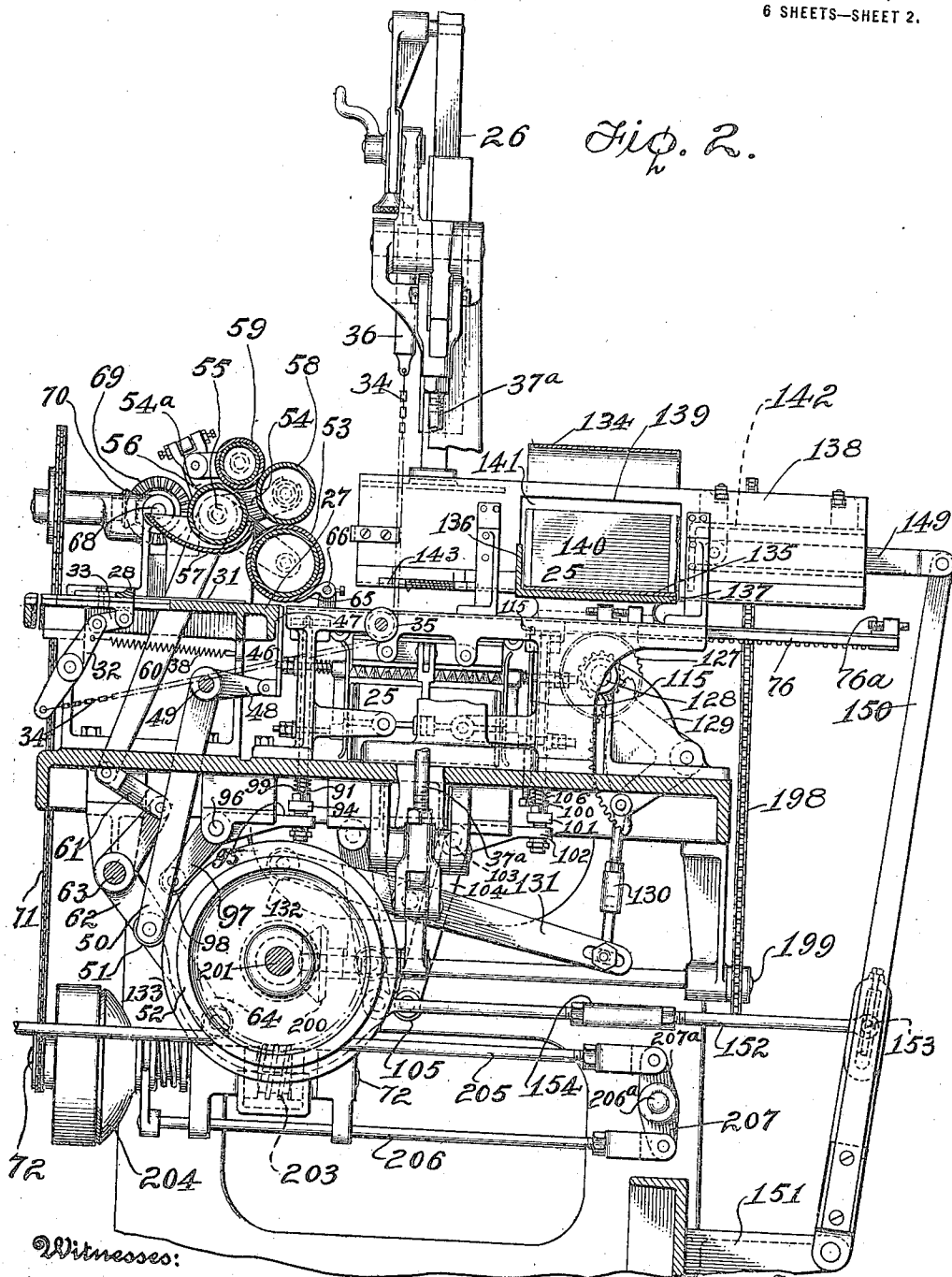
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 6 SHEETS—SHEET 2.



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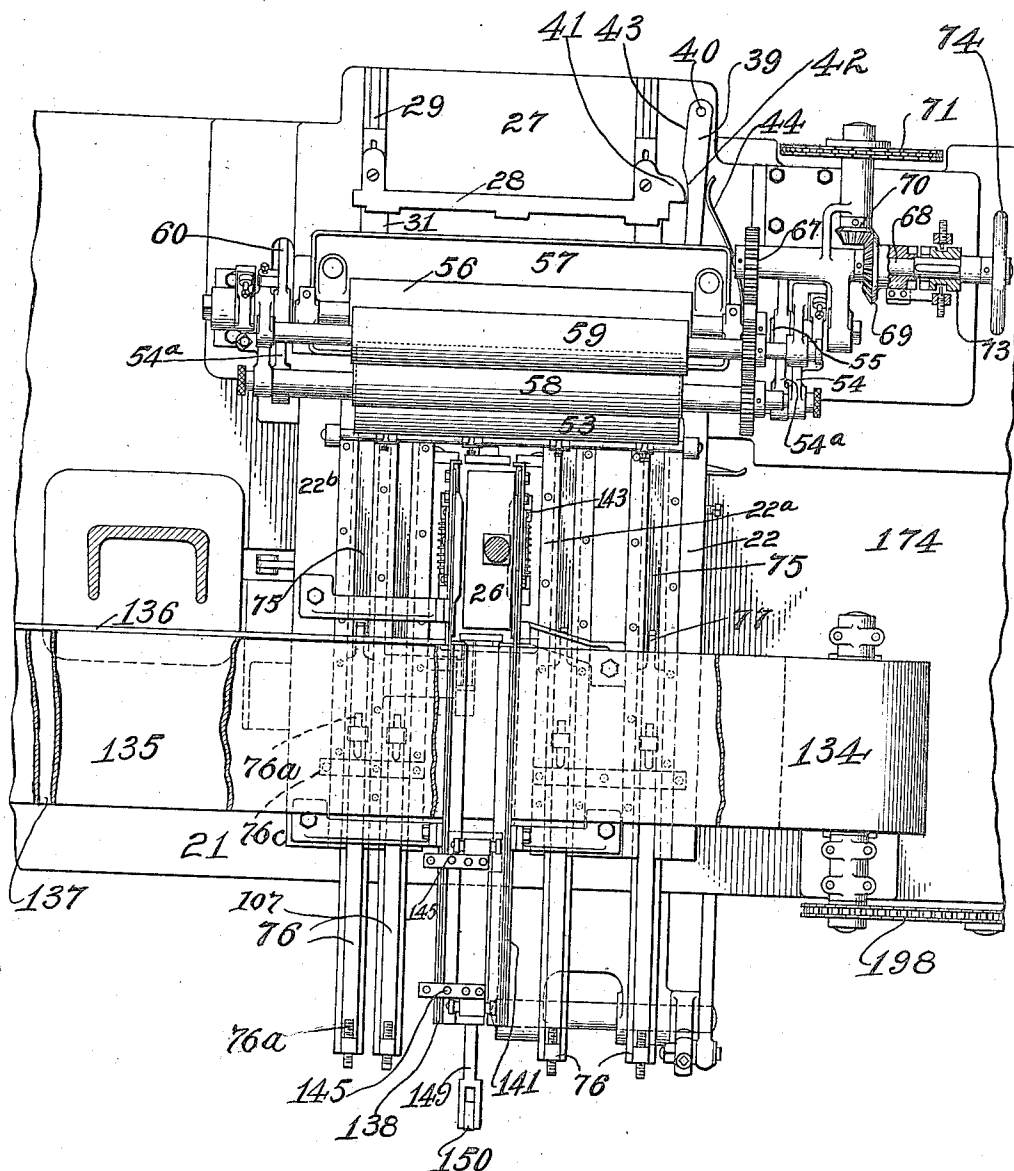
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 6 SHEETS—SHEET 3.

Fig. 3.



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6 SHEETS—SHEET 4.

Fig. 4.

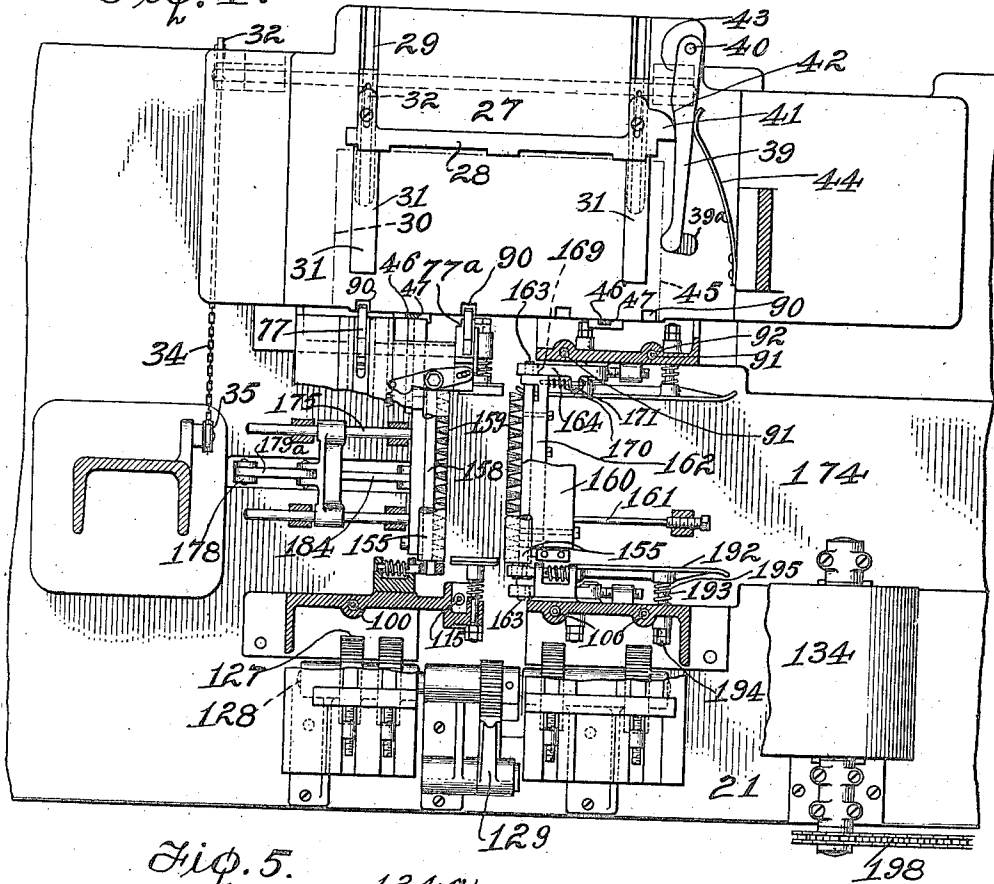
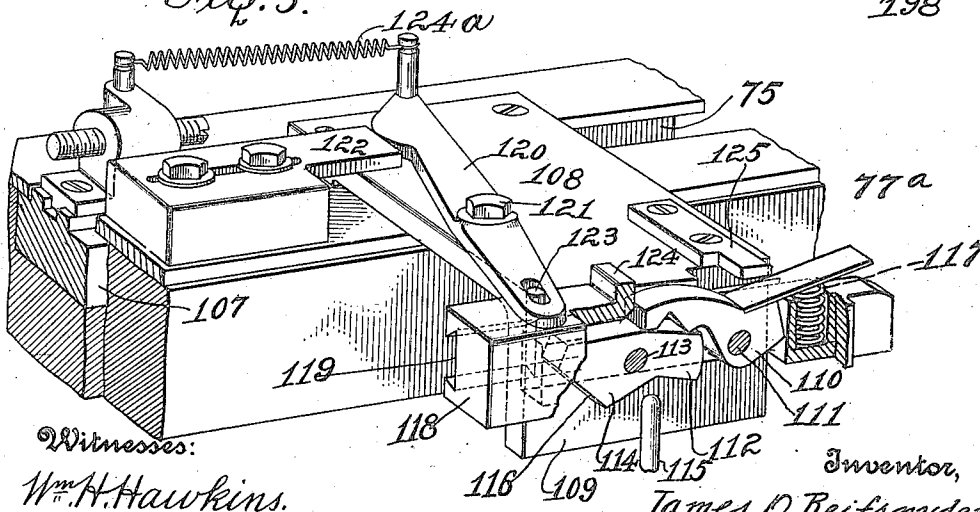


Fig. 5.



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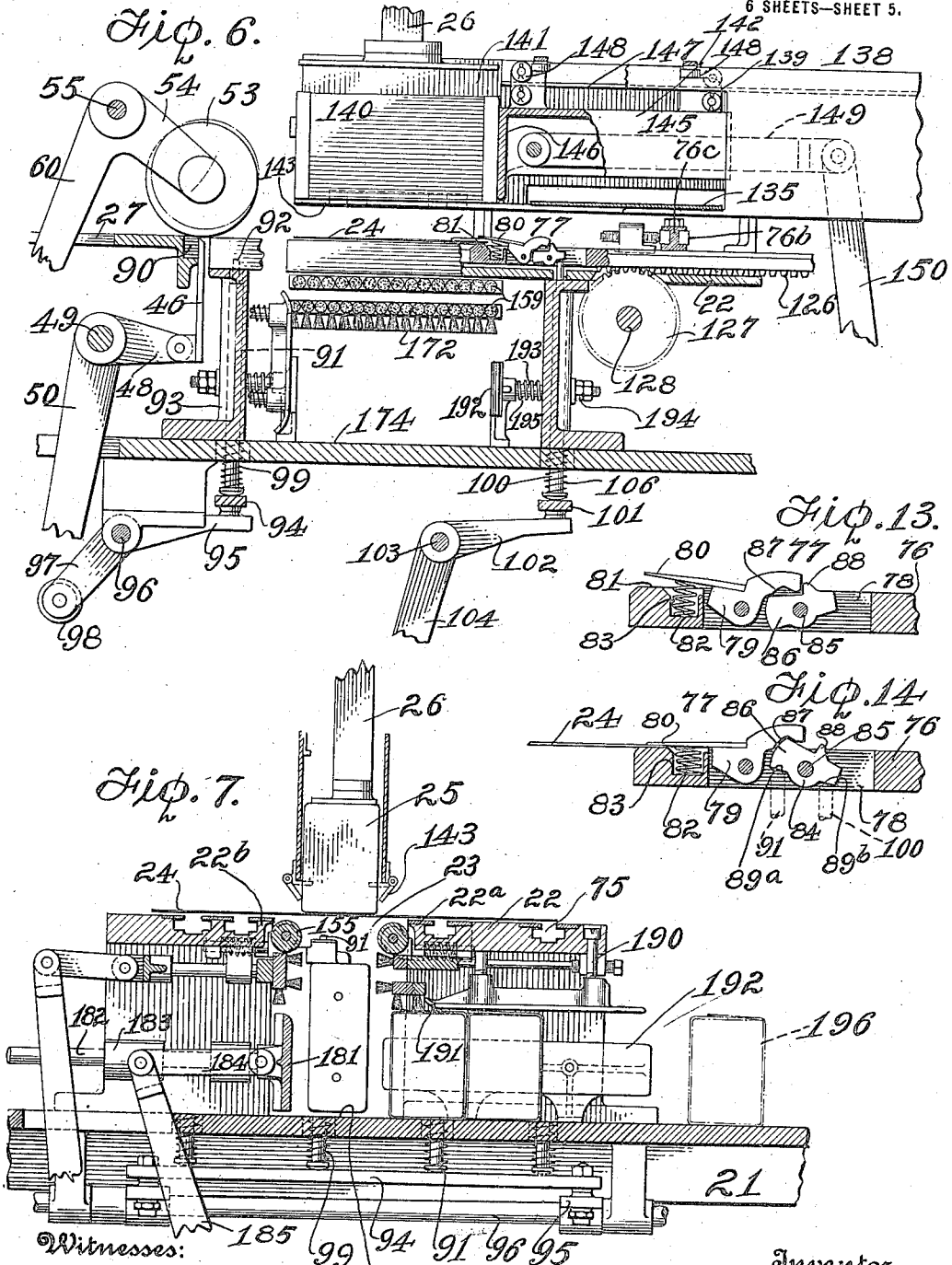
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6 SHEETS—SHEET 5.



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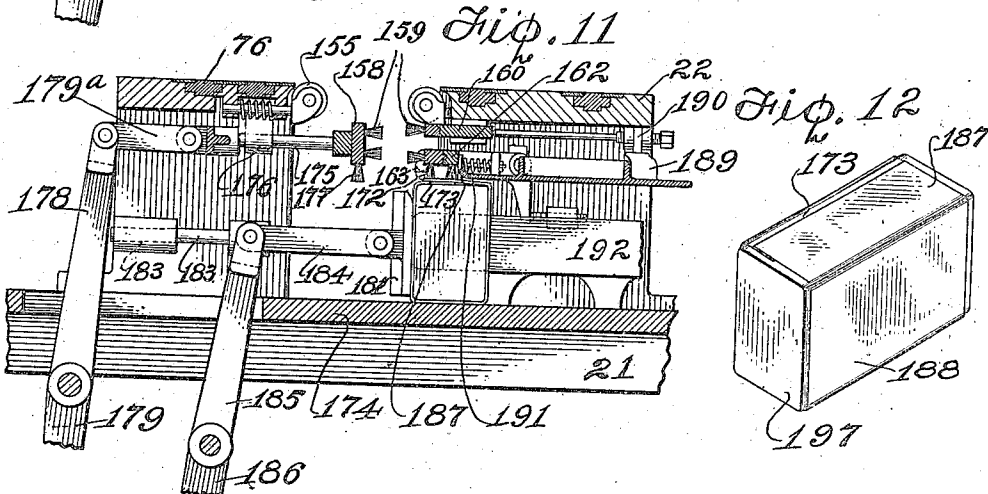
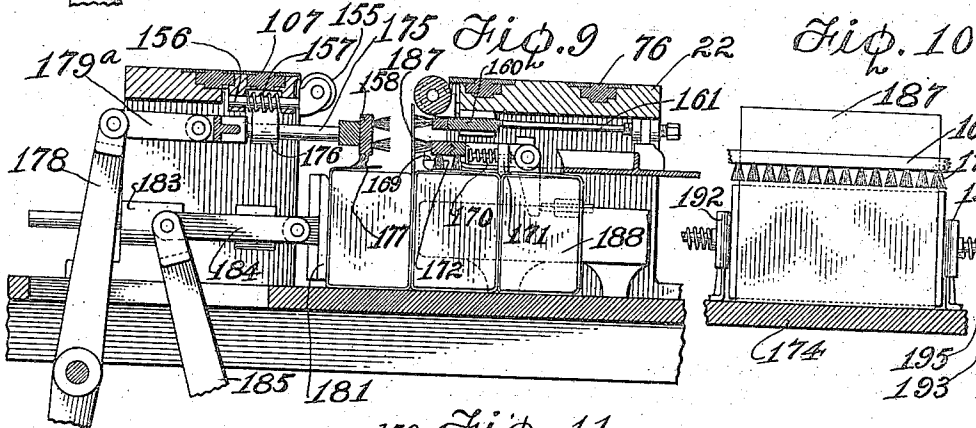
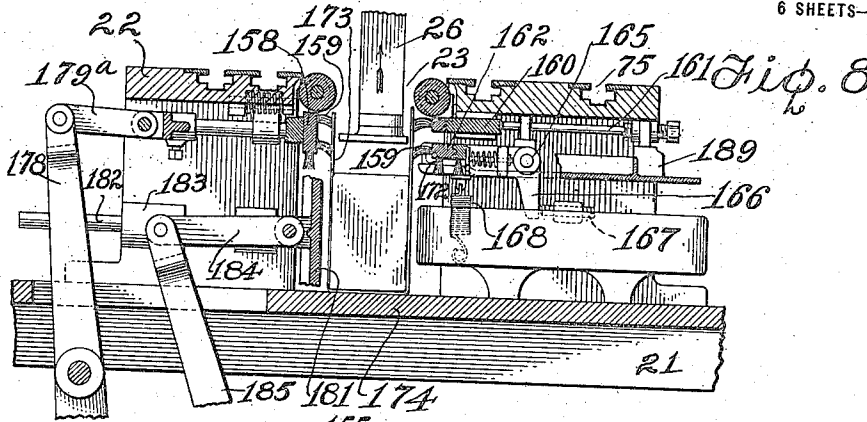
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6 SHEETS—SHEET 6.



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UNITED STATES PATENT OFFICE.

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LABEL-APPLYING MACHINE.

1,254,276.

Specification of Letters Patent. Patented Jan. 22, 1918.

Application filed March 20, 1915. Serial No. 15,717.

To all whom it may concern:

Be it known that I, JAMES D. REIFSNYDER, a citizen of the United States, residing at Olney, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Label-Applying Machines, of which the following is a specification.

This invention relates to a machine for applying labels to packages, and while many features of the invention are applicable in machines for applying labels of any kind to packages, the embodiment of the invention described hereinafter is particularly applicable in machines for applying an adhesive label to several sides of a package.

A principal object of the invention is to provide simple and effective mechanism for applying such a label to a package.

A further object of the invention is to provide mechanism for this general purpose which will operate in such a way as to apply the label successively to the sides of the package, and which will effect this result in a very simple manner.

A further object of the invention is to provide simple means for effecting the application of an adhesive to the labels; and to provide simple means for automatically positioning the label and package at the point from which they pass into the machine with the package.

A further object of the invention is to improve the general construction and details of mechanism for effecting the purposes of a label attaching machine.

Further objects of the invention will appear hereinafter.

The invention consists in the combination of parts and details hereinafter described, all of which contribute to produce an efficient label applying machine.

A preferred embodiment of my invention will be particularly described in the following specification, while the broad scope of my invention will be pointed out in the appended claims.

In the drawings,

Figure 1 is a side elevation and partial section illustrating a machine embodying my invention, certain parts being broken away.

Fig. 2 is an end elevation of the machine

shown in Fig. 1, certain parts being shown in cross-section.

Fig. 3 is a plan of the machine, certain parts being broken away and shown in cross-section.

Fig. 4 is a partial horizontal section and partial plan further illustrating the preferred construction of the mechanism.

Fig. 5 is a perspective showing a detail of special mechanism for releasing one of the grippers which should have a peculiar movement of its own.

Fig. 6 is a vertical section particularly illustrating the means for feeding the packages and the labels into the machine for effecting the alinement and gluing of the labels.

Fig. 7 is also a vertical section taken substantially at right angles to the plane at which the section in Fig. 6 is taken, and particularly illustrating the relation of the package and label just before they pass down into the label applying mechanism.

Figs. 8, 9 and 11 show substantially the same mechanism shown in Fig. 7 and illustrate the successive steps or stages in the movements of the mechanism which effects the application of the label to the package.

Fig. 10 is a diagrammatic view particularly illustrating the manner in which the projecting flaps of the label are folded down on the package.

Fig. 12 is a perspective showing the package with the label applied thereto.

Fig. 13 is a vertical section particularly illustrating the detailed construction of a typical form of gripper I prefer to employ. This view shows the gripper in its open position.

Fig. 14 is a view similar to Fig. 13 but showing one of the typical grippers in its closed position.

Referring more particularly to the parts, 20 represents the frame of the mechanism which preferably includes a table 21 which carries a horizontal elevated supporting table 22, (see Fig. 7). This supporting table 22 is formed with a central opening, well or throat 23, and in the operation of the machine the label 24 is brought into position resting on the table 22, and lies directly over the throat 23. The packages 25 are fed one by one into position over the throat and then

are forced down by means of a plunger 26 into the mechanism of the machine which effects the application of the label to the package.

- 5 While the part 22 is preferably in the form of a table its function is to operate as a supporting means for holding the label 24 in position, and preferably comprises two separated parts 22^a and 22^b, between which
10 the package and label descend.
- The preferred embodiment of the mechanism for advancing the label out onto the supporting table 22, for effecting its alignment and for gluing the label as it is advanced into position, comprises at one side of the machine a feed table 27 which is preferably substantially horizontal, and the labels are placed by hand one by one on this table in front of a bar 28 which reciprocates
20 on the table through the medium of suitable guide slots 29 (see Fig. 4). This bar 28 engages the label indicated at 30 and advances it into position to be seized by the grippers which carry it over the throat 23.
- 25 The bar 28 is provided with forwardly extending plates 31 at each side which lie flat on the table and cover the forward portions of the slots, and on these plates the label 30 rests when it is being advanced by the bar.
- 30 The bar 28 is reciprocated in any suitable manner, preferably through the medium of a rocking lever 32 (see Fig. 2), which is connected by the links 33 with the bar 28 below the table 27, and this rocking lever is rocked
35 automatically by means of a chain 34 which is attached to the lower end of the lever 32 and passes around a guide pulley 35 on the frame, the upper portion of the chain being attached to a link 36 (see Fig. 1), which
40 link is carried by a plunger lever 37 which reciprocates the aforesaid plunger 26. The lever 37 is actuated by link 37^a from drum 52. The bar 28 is preferably controlled in such a manner that it comes forward each
45 time the plunger 26 rises, and in order to effect this, and keep the chain 34 taut I prefer to provide a spring 38 which is attached to the lever 32 and which tends to bring the bar forward. As the bar 28 comes forward
50 an alining arm 39, which is pivoted at 40, alines the edge of the label. In order to effect this the end of arm 39 preferably swings inwardly automatically in a slot 39^a in the table 27, when the bar advances, and
55 for this purpose the end of the bar 28 is provided with a nose 41 which runs on a cam edge on the arm 39. When the nose is in engagement with the straight edge 43 of the arm near the pivot point 40 the arm 39 is removed from the position of the label but
60 when the bar 29 comes forward the nose strikes the cutaway edge or cam 42 and a spring 44 holds the inner edge of the arm in contact with the cam and operates to move
65 the arm inwardly against the side edge 45 of

the label, and this effects the proper alignment for the operation of the machine.

The operator of the machine places the label somewhat to the right of the position which it should occupy, as seen in Fig. 4, 70 and the arm 39 shifts the label laterally as it moves forward.

Referring particularly to Fig. 2, at the forward or inner edge of the table 27 I prefer to provide a plurality of stops or gages 75 46, which are preferably two in number and automatically controlled, so that they project above the face of the table when the table comes forward, and they are withdrawn or depressed automatically when the label is drawn forward into position over the throat 23. In order to effect this movement of the gages 46 I prefer to locate them below the table 27 and guide their upper ends in slots 47 in the table (see Fig. 2). 85 Any suitable means is provided for drawing the gages down at the proper times and for leaving them projecting up when desired. For this purpose, however, I prefer to attach the lower ends of the gages to rocker arms 90 48 carried on a rock shaft 49, said rock shaft being rocked periodically through the medium of an arm 50 having a roller 51 running on the surface of a cam 133.

Preferably just over the gages 46 I provide a gluing roller 53, which roller is preferably operated so that it descends automatically when the label is being drawn forward toward the throat 23, but it is held raised when the gages are projecting up to 100 aline the sheet on the table 27. For this purpose the gluing roller is preferably supported on a rocking frame comprising arms 54 rocking about the axis of trunnions 55, which trunnions carry a wallower or roller 105 56, which dips constantly in the small tank 57 containing a suitable adhesive or glue. The arm 54 carries a distributor roller 58 which is in contact with the face of the gluing roller 53, and which receives the 110 glue from the transfer roller 59 which rests in contact with it and with the aforesaid roller 56. From this arrangement it will be evident that the glue will be continuously applied to the gluing roller 53 and is not 115 interrupted by the rocking movement which is given to the roller 53. In order to rock the roller 53 automatically up and down at the proper times I prefer to provide the rocking frame 54^a with a rocker arm 60 120 which extends down and is rocked to and fro by a link 61, said link being in turn controlled by a bell crank lever 62 rocking on a pin 63 and having an arm 64 which is controlled by a cam on the drum cam 180. 125 Adjacent the under face of the gluing rollers 53 I provide a plurality of guard fingers 65 which are adjustably mounted on the cross-bar 66, and which strip the label off from the gluing roller 53 if it should tend 130

to stick to the roller. In other words, these fingers 65 strip off the label and cooperate in its advance by the grippers.

The wallower 56 may be driven in any suitable manner. In the present instance I have represented it as being driven by a pinion 67 (see Fig. 3) carried on a spindle 68, on which spindle a bevel gear 69 is loosely mounted. This bevel gear is continuously driven by a bevel pinion 70, which is continuously driven by means of a sprocket chain 71 which comes up from a shaft 72 (see Fig. 2). On the spindle 68 there is provided a clutch collar 73 which cooperates with the hub of the bevel gear 69. In Fig. 3 this clutch is represented open, and when in this position no rotation is imparted to the gluing rollers. The spindle may be provided with a hand wheel 74 for rotating it by hand when desired.

In order to feed the label forward from the table 27 automatically to bring it in position over the throat 23 I prefer to provide a plurality of channels or slots 75 in the supporting table 28. These slots are all parallel and in each slot slides freely a gripper bar 76; the forward end of which is provided with gripper devices or grippers 77 (see Figs. 13 and 14). These grippers are preferably mounted in slots 78 formed near the forward ends of the bars. I have illustrated four grippers, three of which are typical and one special. Each typical gripper preferably comprises a pivotally mounted rocker 79 having a finger 80 which is adapted to come down upon the upper face 81 of the gripper bar near its extremity in such a way as to pinch or grip the edge of the label in a manner indicated in Fig. 14. These grippers tend to open automatically. For this purpose I prefer to provide a spring 82 in a recess 83 in each gripper bar, and these springs exert their force against the fingers 80 and tend to raise them to hold the grippers open as in Fig. 13. The grippers may be closed and held closed by means of locks 84, each lock consisting preferably of a small tumbler mounted on a pivot pin 85 so that the tumbler may rock in the slot 78. Each tumbler has a tail 86 which cooperates with a cam finger 87 on the rocker 79 so that when the tumbler is rotated toward the right the tail 86 will ascend and engage the cam edge so as to swing the gripper 80 downward. When in the locked position shown in Fig. 14 the spring 82 cannot open the gripper because the end face of the tail 86 locks the cam of the finger 87 against movement. The tumbler 86 may rock toward the opposite extreme position in which it is shown in Fig. 13, at which time a lug 88 on the tumbler or lock will come against the finger 87 and limit the movement of the tumbler. Each lock or tumbler presents two shoulders 89^a and 89^b

on opposite sides of the axis of the pin 85, which are instrumental in moving the lock from one position to the other in order to effect the closing of the gripper or the releasing movement of the gripper.

When the gripper bars are at the limit of their forward travel the ends of the bars lie adjacent to the forward edge of the label 30 and preferably each gripper bar lies opposite a notch 90 in the edge of the table 27 (see Fig. 4). When the gripper bars come forward the grippers are open, but when the grippers 80 and 81 have passed the edge of the label they are closed automatically to grip the label. The gripper bars are provided with adjustable stops 76^a (see Fig. 3), which come against buffers 76^b (see Fig. 6) in a cross-bar 76^c, at the limit of the travel in each direction. This absorbs the momentum and prevents the mechanism from being racked. For this purpose I prefer to provide a plurality of vertically disposed pusher rods or stems 91 (see Fig. 6), corresponding to all the typical grippers, the ends 92 of which lie near the path of the block 86 of the corresponding gripper, and when the grippers are over these stems 91 the stems are shoved up so that their ends engage the shoulders 89^a and lock the grippers. In order to operate all of these stems 91 simultaneously I prefer to arrange them so that their lower ends project below the frame member 93 which guides them, and I support their lower ends on a horizontal bar 94 which is rocked automatically by a part of the mechanism at the proper moment. For this purpose this bar is carried on rock levers 95 rigidly secured to a rock shaft 96, said rock shaft having an arm 97 with a roller 98 which is controlled by any one of the aforesaid cams. Springs 99 return the push rods 91 after they have been actuated. (See Fig. 2.)

A substantially similar arrangement is provided for releasing the typical grippers after the label has been drawn out and positioned on the table 22. For this purpose I provide a plurality of stems or push rods 100 which are similar to the stems or push rods 91. These are located on the other side of the throat 23 (see Fig. 6). All of these push rods 100 are operated in unison by a bar 101 attached to a pair of rocker arms 102 carried rigidly on a rock shaft 103, said rock shaft being rocked periodically by an arm 104 having a roller 105 (see Fig. 2) which runs on any one of the aforesaid cams, and which is controlled thereby. When the grippers are at the limit of their inward travel the shoulders 89^b are over the stems 100, and these stems or push rods 100 then come up and effect the release of the grippers in the manner described above. These push rods 100 have springs 106 which have the same function as the springs 99.

There are preferably four of the grippers or gripper devices 77, and three of these are mounted directly on the ends of the gripper bars, certain of the parts being mounted in the slot 78, as described above.

In the present instance the label is of slightly less width than the length of the throat through which the package and label move downwardly. And consequently when the label is left by the grippers the jaws of the grippers project beyond the transverse line passing through the edge of the throat. As the throat is wide it is not feasible to leave the entire middle part of the label at this point without gripping means to advance it. Therefore I prefer to provide a special gripper which grips the label near its middle and which travels across the throat. It is necessary therefore to give this special gripper a special movement to clear the throat and keep the gripper out of the path of the descending package and label (see Fig. 4). This gripper device 77^a is preferably offset from its gripper bar and is operated when near the label by one of the stems 91, this stem being of the same construction and operated the same way as the other stems 91 with which it aligns on the side of the machine toward the point of receiving the label. However, I prefer to provide a special releasing arrangement for this special gripper device, and for this purpose I prefer to adopt a construction such as that illustrated in Figs. 4 and 5. The gripper bar 107 slides in its corresponding channel, and near its forward end it carries a laterally projecting plate 108, said plate being preferably formed with a downwardly projecting apron 109. On this apron a block 118 slides freely through the medium of a dovetail groove 119. A rocker 110 is pivoted on pin 111 in the under side of this block behind which is located a lock or tumbler 112 pivoted on pins 113. The rocker 110 is similar to the corresponding rockers 79 of the other grippers, but the tumbler 112 has a special construction on its rear end or tail 114 enabling the gripper to be unlocked by means of a fixed stem 115 (see Figs. 2 and 4). As the gripper 77^a arrives at the limit of its backward travel the upper end of this stem 115 engages a cam face 116 on the tail 114 of the tumbler, and this rocks the forward end of the block down and releases the gripper, which is then moved to its open position by its spring 117. In order to prevent the gripper 77^a from blocking the path of the package and label, I prefer to provide means for shifting the gripper device 77^a slightly when it arrives near the limit of its rearward movement with respect to the other grippers with which it normally aligns. For this purpose I prefer to mount the gripper device referred to above, not directly

on the projecting flange 109, but on the slide block 118. In order to slide this block rearwardly I provide a lever 120 pivotally mounted at 121 on the plate 108. As the gripper bar 107 arrives at the limit of its rearward movement one arm of this lever 120 comes against an adjustable stop plate 122, which shifts the adjacent end of the lever 120 forwardly and by means of a pin and slot connection 123 the lever then shifts the block 118 rearwardly. The amount of movement arising in this way is sufficient to bring the block back so that the jaws of the gripper leave the throat clear. A coil spring 124^a may be provided for normally holding the slide block 118 in an extreme forward position on the plate 108 and so that a stop rib 124 on the block lies against the stop finger 125 on the plate 108. The fixed stem 115 is preferably threaded as indicated so as to render it adjustable.

The gripper bars 76 and the special gripper bar 107 are reciprocated by any suitable means, but preferably by means of racks 126 (see Fig. 6) formed on their rear ends, which racks mesh with pinions 127 respectively, said pinions being rigidly secured on a common shaft 128, which shaft is rocked to and fro in any suitable manner, preferably by means of a large segment (see Fig. 2), which may be rocked up and down by means of a link 130 adjustably attached to a cam lever 131 having a roller 132 operated by a cam 133 (see Fig. 1).

The mechanism for feeding the packages into position over the throat 23 will now be described. For this purpose I prefer to provide a continuously driven feed belt 134 (see Fig. 1), the lower run 135 whereof moves in the direction of the arrow and travels longitudinally of the guide plate 136 (see Fig. 3), being supported on a horizontal plate 137 adjacent the guide plate. This belt travels transversely to a channel-shaped guide 138, one of the side walls whereof has an enlarged opening 139 enabling the belt to carry the package 140 (see Fig. 2) through this wall and up against the opposite wall 141 which obstructs the path of the package as it moves forward on the belt. The belt of course slides freely under the package which has been arrested in this way by the wall 141. In this way the package is held directly in front of a reciprocating package feeding plunger 142, and when the plunger advances from the position in which it is indicated in Fig. 2 it shoves this package farther out in the guide and into position under the plunger 26. The side walls of the guide at this point are provided at their lower edges with spring pressed yielding clips or ledges 143 (see Fig. 7) which engage under the edges of the bottom of the package and support it; at the same time they will permit the plunger 26 to force

the package down and out of the guide in the manner indicated in Fig. 7. It is understood that the packages, such as the packages 144 shown in Fig. 1, are placed constantly upon the belt by the operator and they move continuously toward the channel guide 138. To prevent any possibility of one of the packages entering the guide 138 behind the feed plunger 142 this plunger is made of box form with side walls 145 (see Fig. 6), which side walls are flush with the side edges of the head or end plate 146 of the plunger. With a plunger of this construction evidently this side wall 145 will temporarily arrest the foremost package but will slide freely past the package and finally move out of the way and permit the package to move fully into the guide and come against the obstructing wall 141. This plunger 142 is preferably supported from above by suitable flanges 147, and the upper portion of the plunger is provided with rollers 148 which support and guide the plunger, as will be readily understood.

The package feeding plunger is reciprocated at the proper times in any suitable manner, preferably by means of a link 149 which is pivotally attached to the plunger at one end and pivoted at the other end to a rock lever 150, which lever is pivoted at its lower end on a bracket 151 (see Fig. 2) and rocked back and forth by means of an adjustable link 152 controlled by the lever 152^b and the cam 152^a. The link 152 preferably has an adjustable connection 153 with the lever 150^a which is attached to the shaft 150^b; this enables the amount of stroke of the plunger to be varied as desired. In addition to this the link 152 is made adjustable by means of a turnbuckle or coupling 154, which enables the limits of the travel of the lever 150 to be adjusted.

The operation of folding a label around a package and the mechanism for accomplishing this object will now be described.

Referring particularly to Figs. 7 to 11 inclusive, as the plunger 26 descends it forces the package 25 past the supporting clips 143 and then moves on down between folding devices which are arranged on opposite sides of the throat which cooperate with the plunger to effect the application of the label to three sides of the package. From this it results that the label becomes applied to three sides of the package and two oppositely disposed flaps of the label project up beyond the fourth side. The mechanism then operates to fold these flaps down in succession upon the fourth side.

To effect the application of the label to three sides of the package I prefer to provide two oppositely disposed presser rollers 155 which are preferably of yielding material, such as rubber, and these presser rollers are carried on sliding stems 156 (Fig. 9)

which are preferably provided with springs 157 which enable the rollers to yield slightly when the package passes between them. Of course as the package descends upon the label the under side of the package applies itself to the upper face of the label, and as the downward movement progresses the rollers 155 fold the sides of the label up against two opposite sides of the package. In order to prevent the formation of any air bubbles under the label on the sides and to insure that the label will be nicely applied throughout its entire area to the sides of the package I prefer to provide flexible wiping devices or wipers 158, and these are preferably in the form of brushes having substantially horizontal bristles 159 (see Fig. 11) which engage the outer face of the label and smooth it against the side of the package. The wiping device at the right, as viewed in Fig. 8, preferably comprises an upper brush 160 which is fixed but which is adjustable toward the opposite brush by means of an adjustable stem 161. Below this brush 160 there is provided a yielding brush 162, the position of which is preferably slightly adjustable as to height. In order to effect this adjustment as to height I prefer to adopt the construction illustrated (see Figs. 4 and 8). This construction consists substantially in supporting the ends of the brush by means of pins 163 in the forward ends of the horizontal arms 164 of brackets 165. These brackets 165 have vertical arms 166 (see Fig. 8) which rest against adjustable stops 167, the brackets being held in this position by means of springs 168 which pull down the horizontal arms. In addition to this the brushes are mounted in the arms 164 so that they can yield or move slightly in the arms. For this purpose referring particularly to Fig. 4, the pins 163 are mounted in slots 169 in the arms and the backs of the brushes are pressed by small springs 170 which thrust against lugs 171 projecting inwardly from the horizontal arms 164. This lower brush 162 carries some of the horizontal bristles referred to above, but in addition carries substantially vertical bristles 172 for a purpose which will appear more clearly hereinafter.

In order to apply one of the upwardly projecting flaps 173 to the upper side of the package after the package has been forced past the wiper devices and down to the point 174 of the table 21, I prefer to advance one of the folding devices in a direction transverse to the fourth side of the package. For this purpose I prefer to mount the brush 158 at the left of the throat in such a way that it can be advanced after the plunger 26 has withdrawn. For this purpose the brush 158 is preferably secured to a sliding stem 175 which is mounted to slide through a suitable guide 176. When this brush is advanced in

this way its vertical bristles 177 engage the flap 173 and fold it down onto the upper face of the package (see Fig. 9). The stem 175 carrying this brush is advanced at the proper time preferably by means of a lever 178 which connects with the stem through the medium of a link 179^a, said lever 178 being rocked by means of an arm 179 (see Fig. 1), which is controlled by a cam 180.

After this wiper or folding brush has advanced and folded down one of these flaps I prefer to effect the folding down of the other flap of the label by moving the package and label bodily in a lateral path. This is preferably effected by means of a plunger 181 which is suitably mounted on guide stems 182 carried in suitable guides 183. The plunger is operated by means of a link 184 connected to a lever 185, which lever extends downward and is rocked at the proper time by an arm 186 controlled by the aforesaid drum cam 180. When the plunger advances it engages the side of the package and then forces it laterally as indicated in Figs. 9 and 11. The horizontal bristles 159 of the brushes 160 and 162 initiate the downward folding movement of the flap 187, and as the package moves under the vertical bristles 172, these bristles wipe or fold the flap down completely upon the upper or fourth side of the package. When the machine is in operation the package which has just had its label folded as suggested, is pushed out of the way by the next following package, and these completely labeled packages 188 pass along under a horizontal presser plate 189, which plate is yieldingly suspended from the table 22 by means of suitable adjustable screws 190, (see Fig. 7).

The forward edge of this presser plate has a turned-up lip 191 which facilitates the packages passing under the plate. As the packages 188 move along under the presser plate 189 they are guided at the sides by yielding spring-pressed guide plates 192 which are carried on stems 193 and adjustable by means of nuts 194 carried by the threaded ends of these stems. These nuts limit the inward movement of the guide plates and springs 195 permit the plates to yield outwardly as the packages pass between the plates. The presser plate of course exerts its weight on the folded down flaps and prevents their becoming detached. This plate is long enough to insure that the packages will be under the plate a sufficient time to enable the glue to maintain its hold after the packages are delivered at the point indicated by the dotted outline 196 (see Fig. 7).

The complete package 197 with the label folded about it is illustrated in Fig. 12.

The belt 134 may be continuously driven by means of a sprocket chain 198 (see Fig. 1), said chain being driven from below by a counter shaft 199 driven by bevel gears

200 from the drum shaft 201. The drum shaft 201 is driven through a suitable worm wheel 202 and a worm 203 from the aforesaid shaft 72, said shaft 72 being provided with a suitable clutch 204 controlled by a draw bar 205. This draw bar rocks shaft 206^a through lever 207^a which actuates lever 207 to move push rod 206 which operates the clutch.

The general mode of operation of the machine will now be briefly stated. The labels are fed one by one onto the feed table 27 in position in front of the feed bar 28 and in a position somewhat to the right of that indicated by the outlined label 30, as seen in Fig. 4. The feed bar 28 advances and shoves the label forward; at the same time the arm 39 comes in at the side and engages the edge 45 of the label so as to align the label properly. The bar 28 advances until the forward edge of the label comes against the stops or gages 46 which arrest the forward edge of the label at the notches 90 (see Fig. 4) and in a position to be gripped by the grippers 77. When the label is in this position the gripper bars 76 and the special gripper bar 107 will have moved over so that the gripper devices are near the edge of the sheet and the gripper devices are then automatically operated by the push rods or stems 91 to close the grippers. Of course just before this occurs the gages 46 draw down out of the way so that they will not obstruct in any way the movement of the grippers. When the gages 46 are elevated as just described, the gluing roller 53 is also elevated.

As soon as the grippers have gripped the label the gluing roller 53 descends automatically and the grippers then pull the label forward under the roller so that the roller applies glue to the entire upper face of the label. When the grippers arrive at the limit of their backward travel the label will be brought over the throat 23 and the releasing stems or push rods 100 will then be actuated to unlock the grippers and release the label. In this connection attention is called to the operation of the special gripper device 77^a and to the fact that it is mounted on a slide block 118. This slide block is given an extra movement through the lever 120 which moves the slide block and gripper back so as to clear the throat and prevent it from obstructing the path of the package and label as they descend through the throat.

The packages to be labeled are fed in a continuous stream onto the feed belt 134, being laid upon the lower run 135 of the belt. These packages pass in succession into the channel guide 138 from which they are advanced one by one by the reciprocating plunger 142. This plunger advances each package out onto the supporting clips 143

which support it directly over the label, and the plunger 26 then descends and forces the package and label down into the throat 23 and between the oppositely disposed folding devices. These devices then operate as described above to fold down the upwardly projecting flaps 173 and 187 so that these flaps lie upon and adhere to the upper face of the package, all of which has been fully described in connection with Figs. 8 to 11.

By constructing the machine with separate or individual gripper bars it will be evident that the machine is well adapted for operating upon labels of different kinds, including labels having irregular edges, because the individual gripper bars can be adjusted to the proper position to engage such an irregular edge.

It is understood that the embodiment of the invention set forth herein is only one of the many embodiments or forms the invention may take, and I do not wish to be limited in the practice of the invention nor in my claims to the particular embodiment set forth.

What I claim is:

1. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to apply the label, means for feeding gummed labels over the throat, supports for the packages to be labeled located over the throat, a guide-way for the packages leading to said supports, an endless carrier moving transversely through said guide-way, means for pushing packages off the carrier into position on the supports, and a plunger for moving the packages from between the supports onto the label and into the throat to have the label applied thereto.

2. In a label applying machine and in combination, oppositely disposed label folding means forming between them a throat into which a package and its label are to be forced to apply the label to the package, means for feeding gummed labels over the throat, supports for the packages to be labeled located over the throat, a guide-way for the packages leading to said supports, a feed belt moving transversely through said guide-way for carrying and advancing a plurality of the packages to be labeled, a member obstructing the path of and operating to arrest the packages on said belt, means for pushing the packages off the belt into position on the supports and a plunger for moving the packages from between the supports on to the label and into the throat to have the labels applied thereto.

3. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to have the label applied to

the package, means for feeding gummed labels and holding them temporarily over the throat, supports for the packages to be labeled located over the throat, a guide-way for the packages leading to said supports, a feed belt for carrying and advancing a plurality of packages to be labeled, said feed belt moving transversely through said guide-way, a member obstructing the path of and operating to arrest the packages on said belt, a feed pusher mounted to move transversely to said belt adjacent said member for engaging the package which is adjacent the member to advance the same between said supports, said feed pusher operating when so advanced to obstruct the path of the remaining packages and arrest the advance of the same until said feed pusher withdraws, and a plunger for moving the package from between the supports onto the label and into the throat to have the label applied thereto.

4. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to have the label applied to the package, means for feeding the gummed labels over the throat, a main plunger, means for reciprocating said plunger to move the package and its label down into the throat and between the label applying means, a feed belt for carrying and advancing a plurality of the packages to be labeled, a member obstructing the path of and operating to arrest the packages on said belt, a feed pusher mounted to move transversely to said belt adjacent said member for engaging the package which is adjacent said member to advance the same off said belt and in position over the throat and below the main plunger.

5. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to apply the labels to the packages, a supporting table at one side of the throat, a plurality of grippers movable transversely of said table, means for reciprocating said grippers to bring the labels successively over said throat, means for closing the grippers on one edge of the label, means located at another point for effecting the operation of the grippers to release the labels when over said throat, and a plunger for moving the package onto the label and into the throat to have the label applied.

6. In a label applying machine and in combination, a feed table for supporting an unadhesive label, a supporting table for an adhesive label, a reciprocating carriage having grippers for engaging and drawing the label from the feed table on to said supporting table, means for applying adhesive to

the upper face of the label as it is advanced by the grippers toward said supporting table, said supporting table having an opening therein forming a throat, means for advancing a package and the label to be applied thereupon into said throat, means at opposite sides of the throat for folding the label against three sides of the package so that the label presents flaps projecting beyond the plane of the fourth side, and means for thereafter folding the said projecting flaps down upon and adhesively attaching the same to the fourth side of the package.

7. In a label applying machine, in combination, oppositely disposed brushes, means for positioning an adhesive label over said brushes, means for advancing a package and said label between said brushes, said brushes cooperating to apply the wrapper to three sides of the package and so that a pair of opposite edge flaps of the label project beyond the plane of the fourth side of the package, another brush movable transversely across the fourth side of the package to fold down one of said projecting edge flaps, means for moving said package bodily in a lateral path, and another brush disposed adjacent said lateral path and operating to fold down the other of said edge flaps upon the fourth side of said package.

8. In a label applying machine, in combination, oppositely disposed brushes having substantially horizontally projecting bristles and having below said first-named bristles a plurality of substantially vertically disposed bristles, means for positioning an adhesive label over said brushes, means for advancing a package and said label between said brushes and so that the label comes in contact with the said horizontal bristles, said parts cooperating to press the label against two opposite sides of the package and the intermediate lower side of the package and so that a pair of opposite edge flaps of the label project beyond the plane of the fourth side of the package, means for advancing one of said brushes laterally across the fourth side of the package so that the vertical bristles thereof engage the projecting flap and press the same down onto the fourth side of the package, and means operating thereafter for advancing the package bodily under the bristles on the side opposite to said last-named brush, the vertical bristles on said opposite side operating to fold down the other said projecting flap onto the fourth side of said package.

9. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to apply the label to the package, a

table for the ungummed labels, an alining gage for the labels at the forward edge of the table, a glue applying roller, means for drawing the label under said glue applying roller to have adhesive applied to one face thereof, means for depressing said roller periodically into position for operating upon the labels, means for periodically withdrawing said gage to permit the label to pass the latter so that the drawing means may advance the label and deposit the same over said throat, and a plunger for forcing the package and its label into said throat and between the applying means to apply the label to the package.

10. In a label applying machine and in combination, oppositely disposed label applying means forming between them a throat into which a package and its label are to be forced to apply the label to the package, a table at one side of the throat for supporting an ungummed label, an alining gage at the forward edge of the table for registering the forward edge of the label, a glue applying roller located above and at the forward edge of the table, means for periodically withdrawing said gage, reciprocating grippers for engaging the forward edge of the label and operating to draw the label forward under the roller when the gage is in its withdrawn position and for carrying the label forward to a position over the said throat, and a periodically reciprocating plunger for carrying the packages to be labeled into contact with the gummed label and down into the throat to have the label applied thereto by the label applying means.

11. In a label applying machine, in combination, a table, oppositely disposed folding devices below said table, reciprocating means having gripping devices for grasping and positioning an adhesive label over said folding devices upon said table, means for advancing a package and a label downwardly between said folding devices, said folding devices operating to fold the label about three sides of the package and so that a pair of opposite edge flaps of the label project beyond the plane of the fourth side of the package, folding means mounted to move relatively to the package in a direction transverse to said fourth side operating to fold down one of said flaps upon said fourth side, means for giving the package a lateral movement thereafter, and means adjacent the path of lateral movement of the package operating to fold down the other flap upon said fourth side.

12. In a label applying machine, in combination, supports for an adhesive label disposed apart so as to form a throat therebetween, reciprocating means for grasping a label and conveying it to said supports, means for supporting the package to be la-

beled over said throat, means for forcing the package and label down through said throat, means on the opposite sides of said throat for causing the label to adhere to two opposite sides and the third intermediate side of the package and so that the label presents upwardly extending flaps projecting past the plane of the fourth side, means for folding one of said flaps down upon the fourth side, means for moving the package bodily in a lateral path thereafter, and means adjacent the lateral path of the package for folding down the other flap upon the fourth side.

13. In a label applying machine, in combination, supports for an adhesive label disposed apart so as to form a throat therebetween, means for supporting the package to be labeled over said throat, means for forcing the package and label down through said throat, brushes on the opposite sides of said throat for causing the label to adhere to two opposite sides and the third intermediate side of the package and so that the label presents upwardly extending flaps projecting past the plane of the fourth side, one of said brushes having additional downwardly extending bristles, means for advancing the latter named brush to fold one of said flaps down upon the fourth side, means for moving the package bodily in a lateral path thereafter, and means adjacent the lateral path of the package for folding down the other flap upon the fourth side.

14. In a label applying machine, in combination, a feed table for supporting an unadhesive label, a supporting table for an adhesive label, a reciprocating carriage having grippers for engaging and drawing the label from the feed table onto said supporting table, means for applying an adhesive to the upper side of the label as it is advanced toward said supporting table, said supporting table having an opening therein forming a throat, means for supporting a package above said supporting table and over said throat, means for advancing the package and the label down through said throat, means on opposite sides of said throat for folding the label against three sides of the package and so that the label presents flaps projecting beyond the plane of the fourth side, means movable transversely of the fourth side of the package to fold down one of said flaps upon the fourth side, means for moving the package thereafter bodily in a lateral path, and means adjacent said lateral path for folding down the other flap upon said fourth side.

15. In a label applying machine, in combination, a feed table for supporting an unadhesive label, a supporting table for an adhesive label, reciprocating means for

drawing the label from the feed table onto said supporting table, grippers for gripping the foremost edge of the unadhesive label, means for releasing the said grippers when the label is over said supporting table, means for applying an adhesive to the upper side of the label as it is advanced toward said supporting table, said supporting table having an opening therein forming a throat, means for supporting a package above said supporting table and over said throat, means for advancing the package and the label down through said throat, means on opposite sides of said throat for folding the label against three sides of the package and so that the label presents flaps projecting beyond the plane of the fourth side, means movable transversely of the fourth side of the package to fold down one of said flaps upon the fourth side, means for moving the package thereafter bodily in a lateral path, and means adjacent said lateral path for folding down the other flap upon said fourth side.

16. In a label applying machine, in combination, a supporting table having a plurality of transverse slots therein, bars mounted to slide in said slots, grippers carried thereby, said table having a throat with wipers therein between which the package and label pass in applying the label to the package, means for forcing the package and its label between the wipers in the throat, means for reciprocating said bars to feed the labels one by one over said throat, and automatic means for operating the grippers at the limits of their travel to cause them to grip the label to advance it and then release the label when over said throat.

17. In a label applying machine, in combination, means for applying a label to the walls of a package, a throat between said label applying means through which the package and label move downwardly to pass said label applying means, a label feeding device comprising a plurality of movable grippers, means for reciprocating said grippers so as to advance the label to a point over said throat, one of said grippers being in line with said throat, and means for giving said last-named gripper an increased movement to clear said throat and leave the same unobstructed to permit the free passage of the package and label therethrough.

18. In a label applying machine, in combination, means for applying a label to the walls of a package, a throat between said label applying means through which the package and label move downwardly to pass said label applying means, a label feeding device comprising a plurality of movable grippers, means for reciprocating said grippers so as to advance the label to a point

over said throat, one of said grippers being
in line with said throat, a slide supporting
said last-named gripper, and means for giv-
ing said slide a movement to move that
5 gripper to clear the throat and thereby
leave the throat unobstructed to permit the
free passage of the package and label.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

JAMES D. REIFSNYDER.

Witnesses:

CARL E. SCHAEFFER,
SILAS E. CHILD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
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