

Sept. 4, 1923.

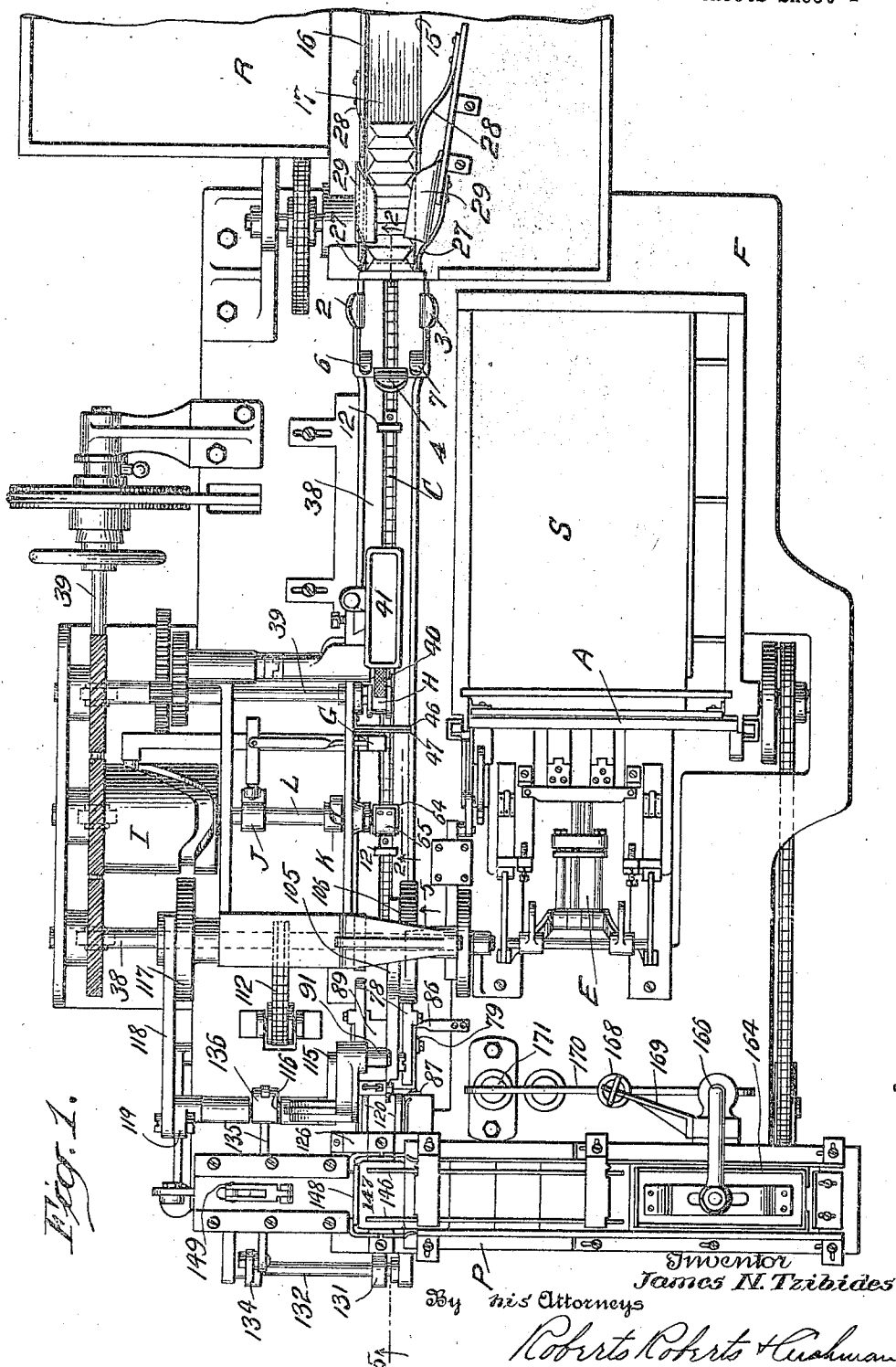
J. N. TZIBIDES

1,467,018

MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 1



Sept. 4, 1923.

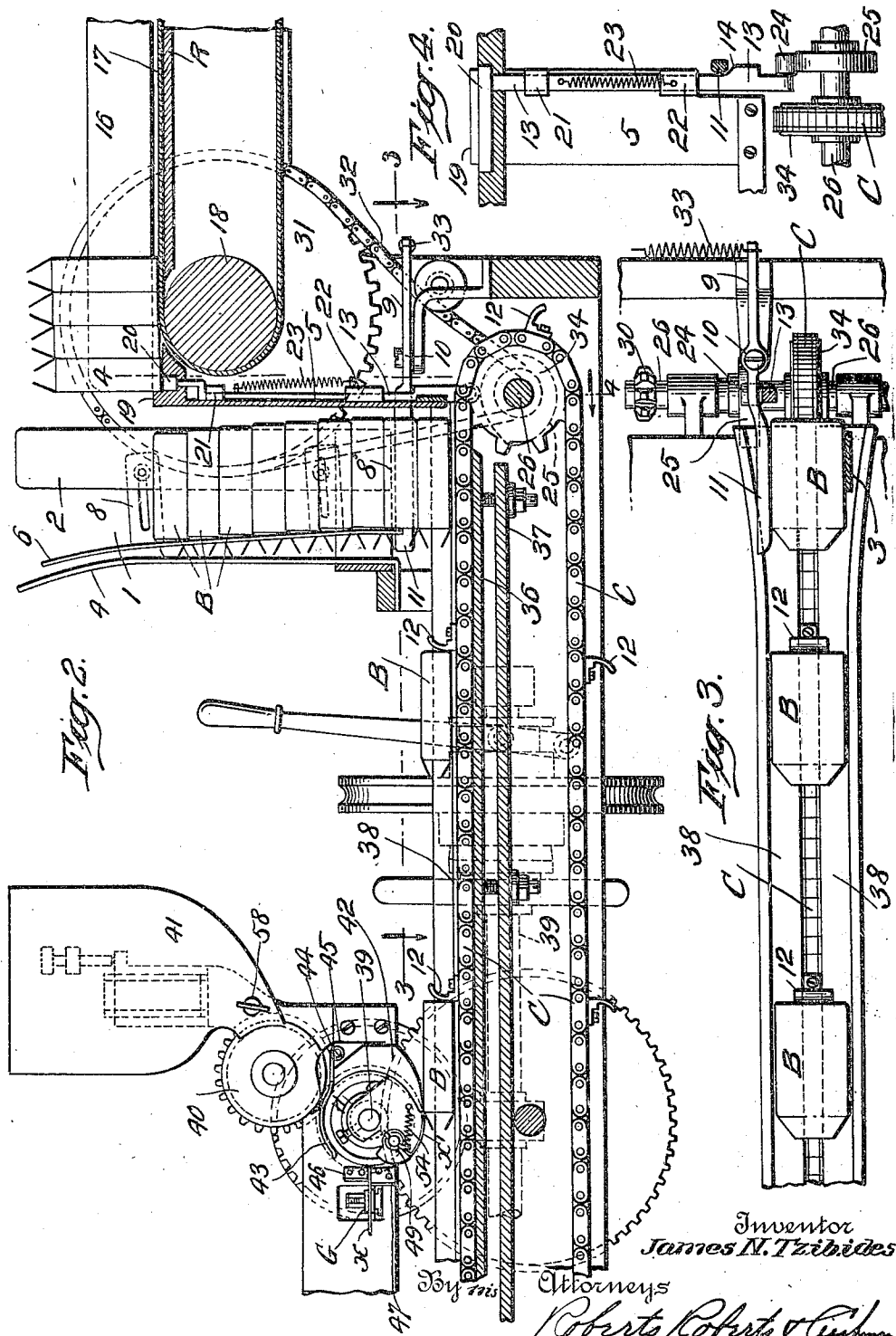
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 2



Sept. 4, 1923.

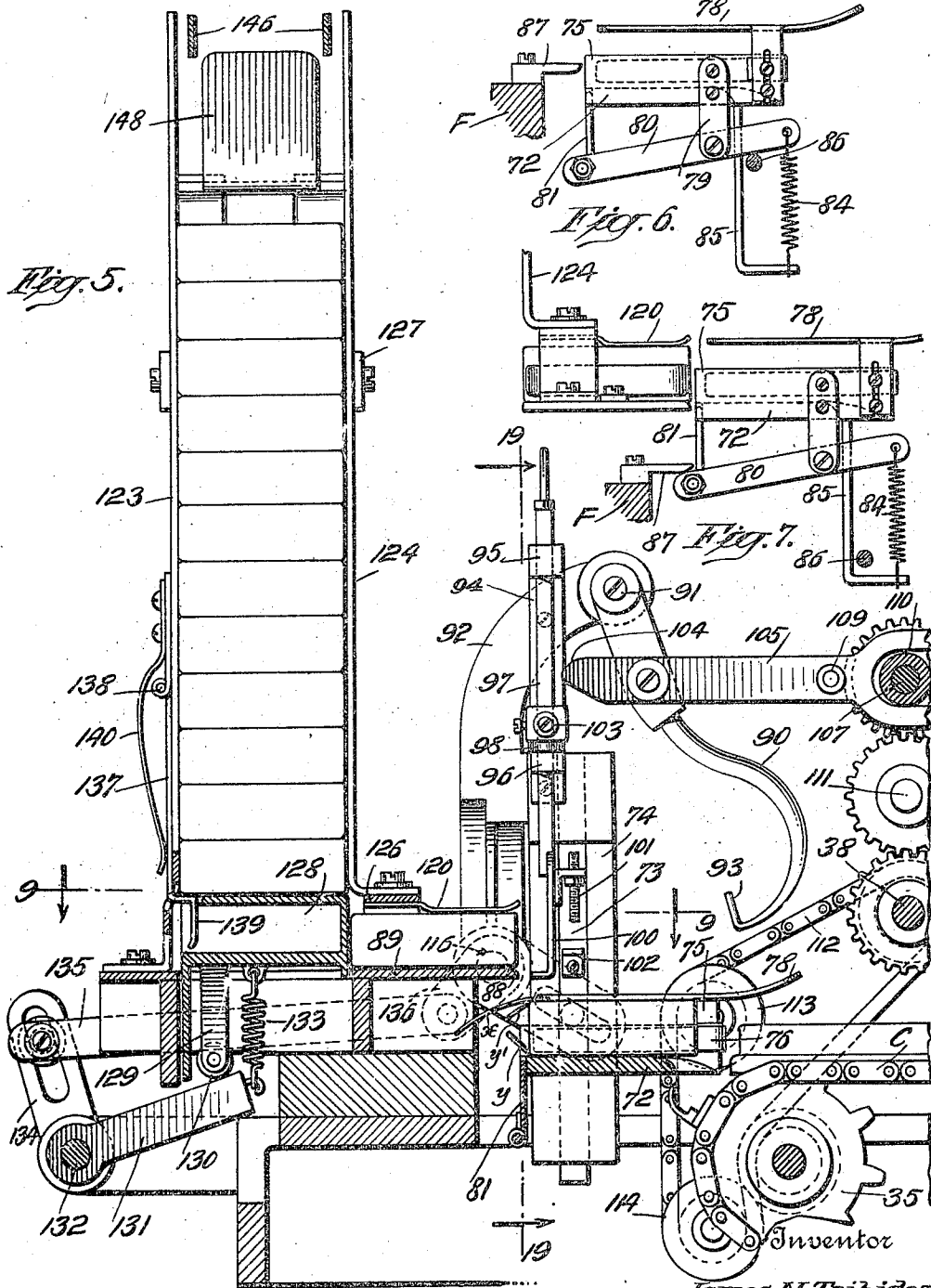
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 3



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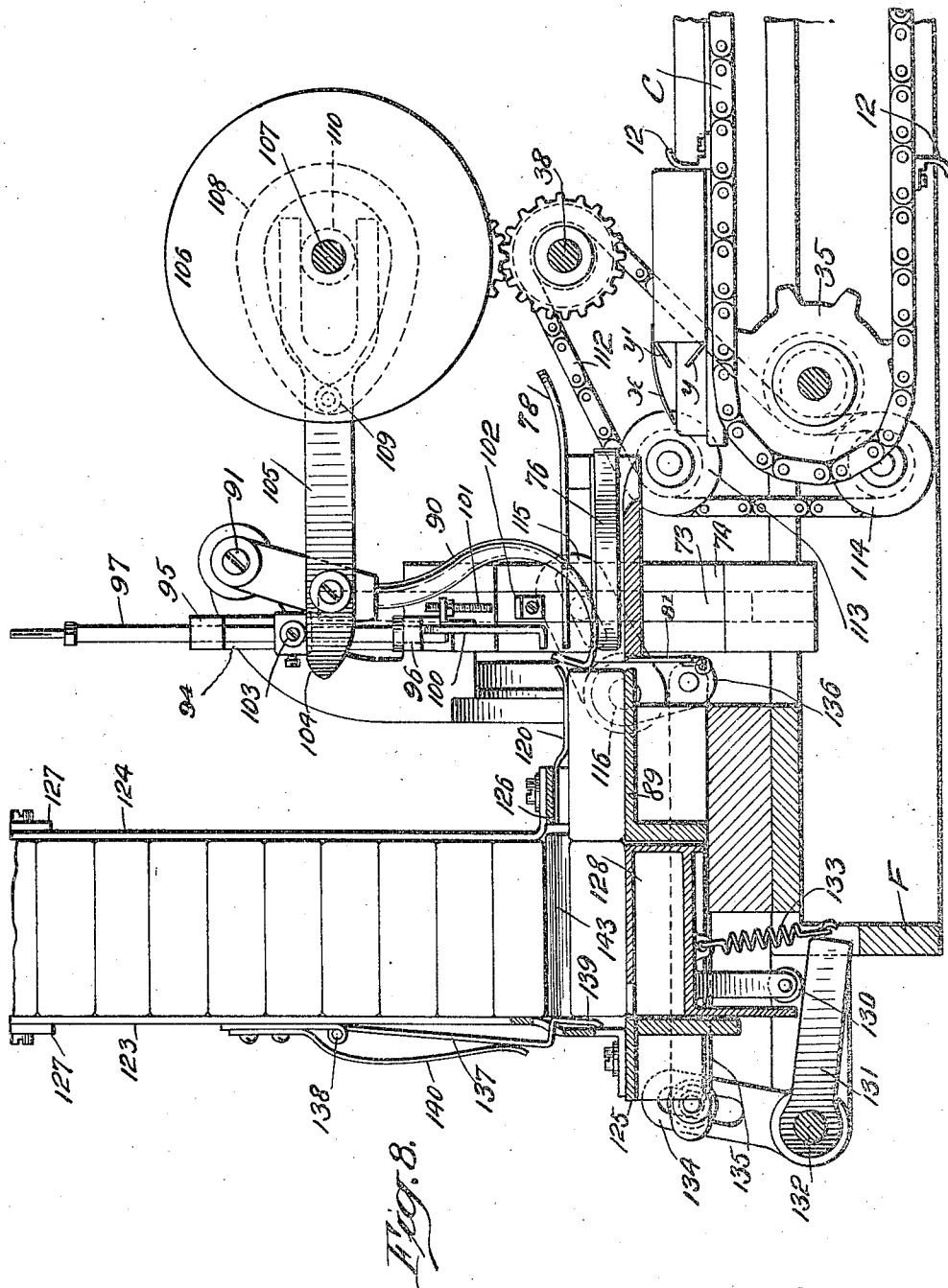
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 4



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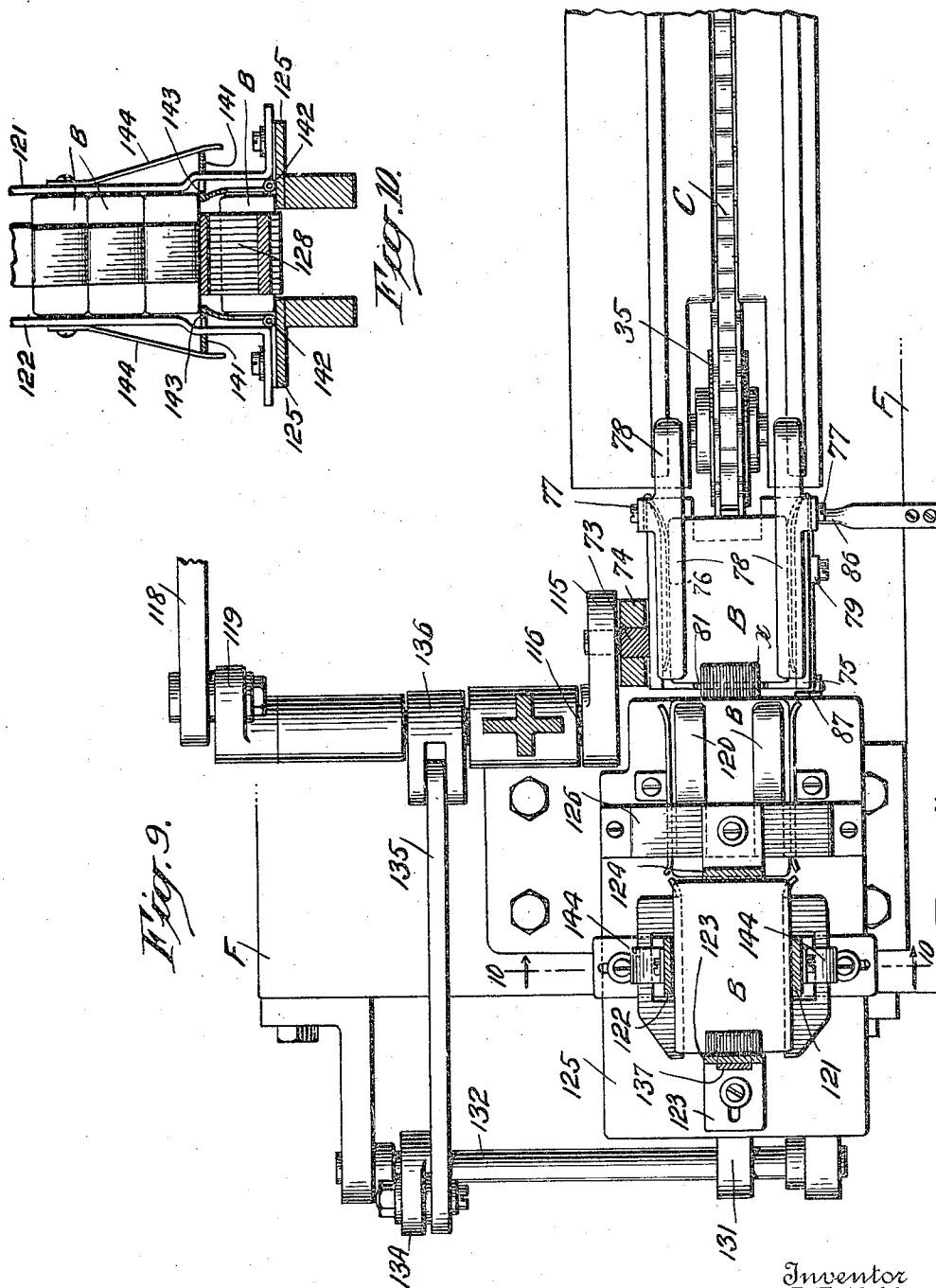
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 5



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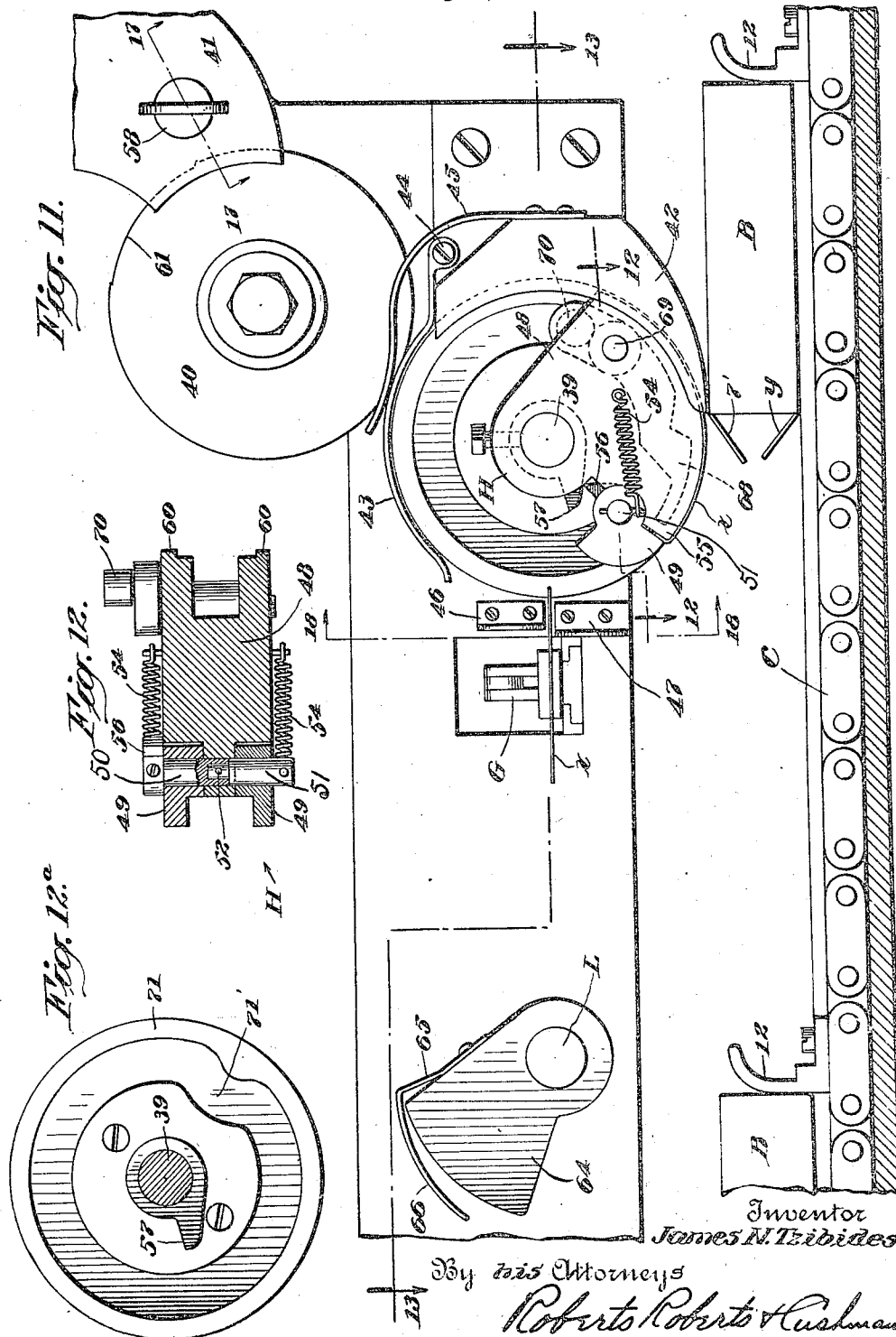
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

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11 Sheets-Sheet 6



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11 Sheets-Sheet 7

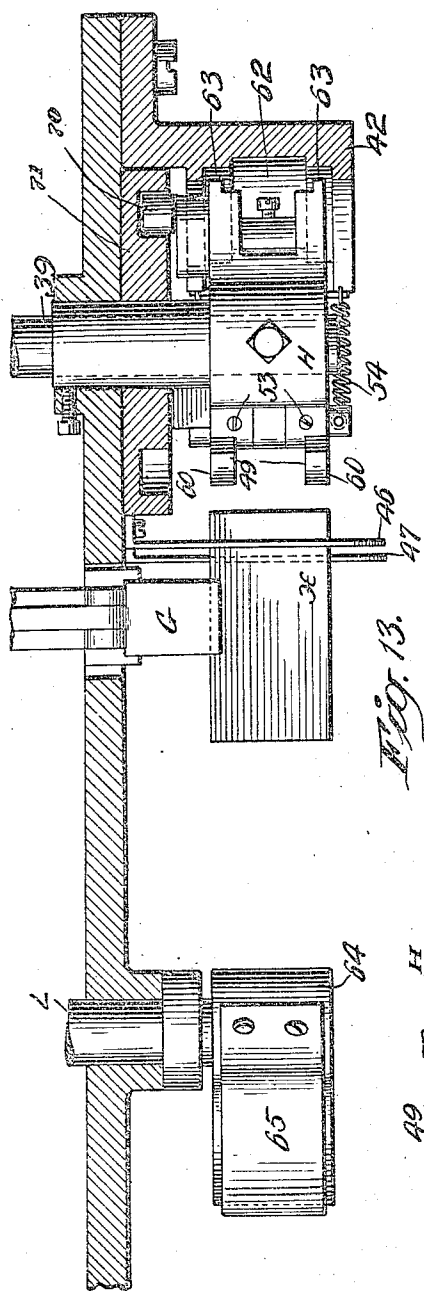


Fig. 13.

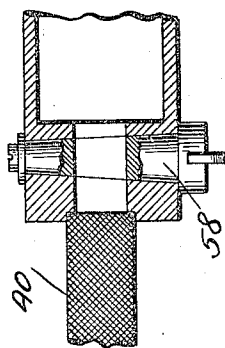


Fig. 14.

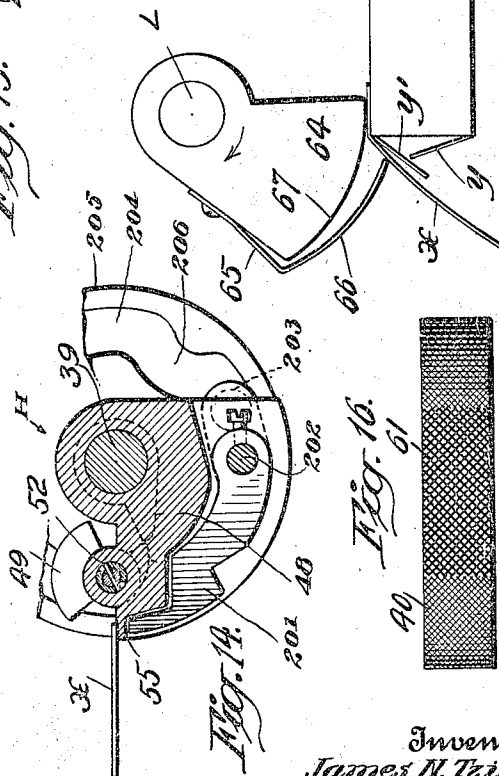


Fig. 15.

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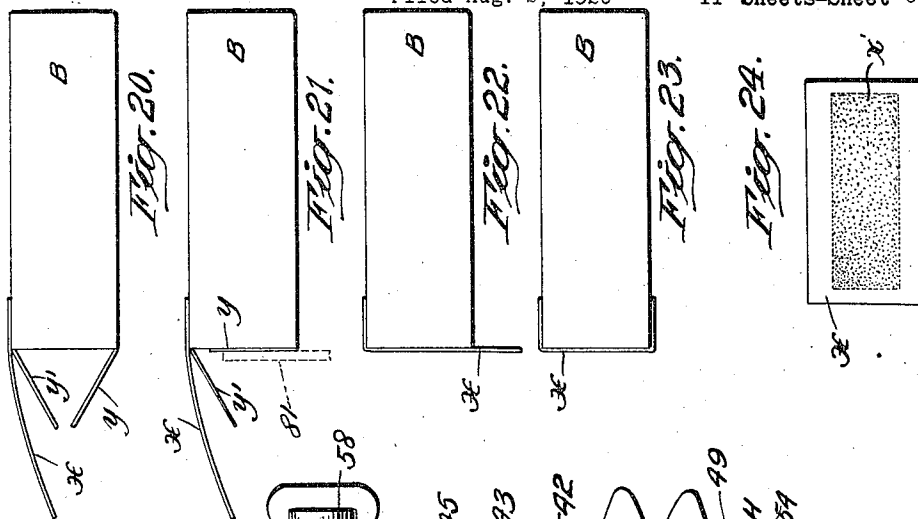
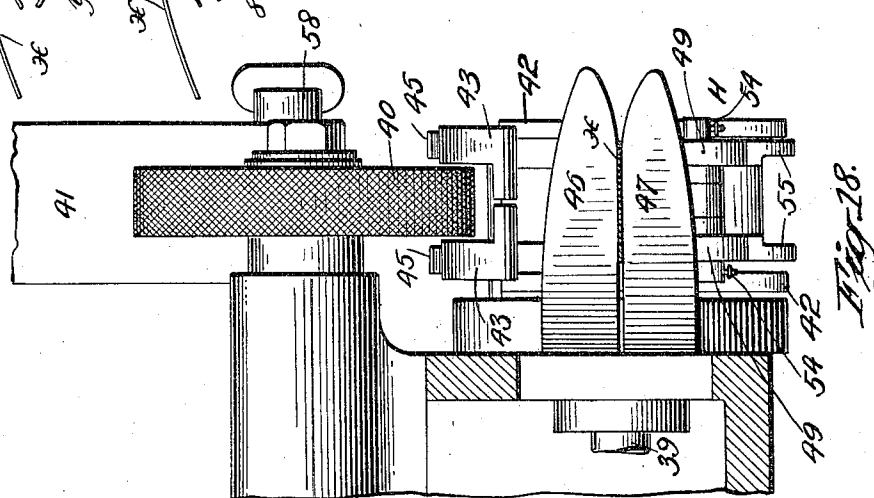
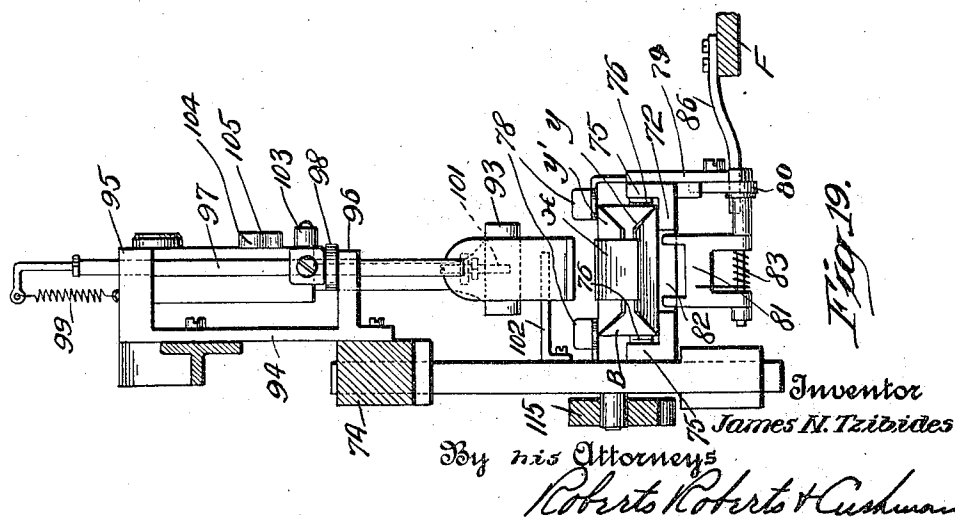
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 8



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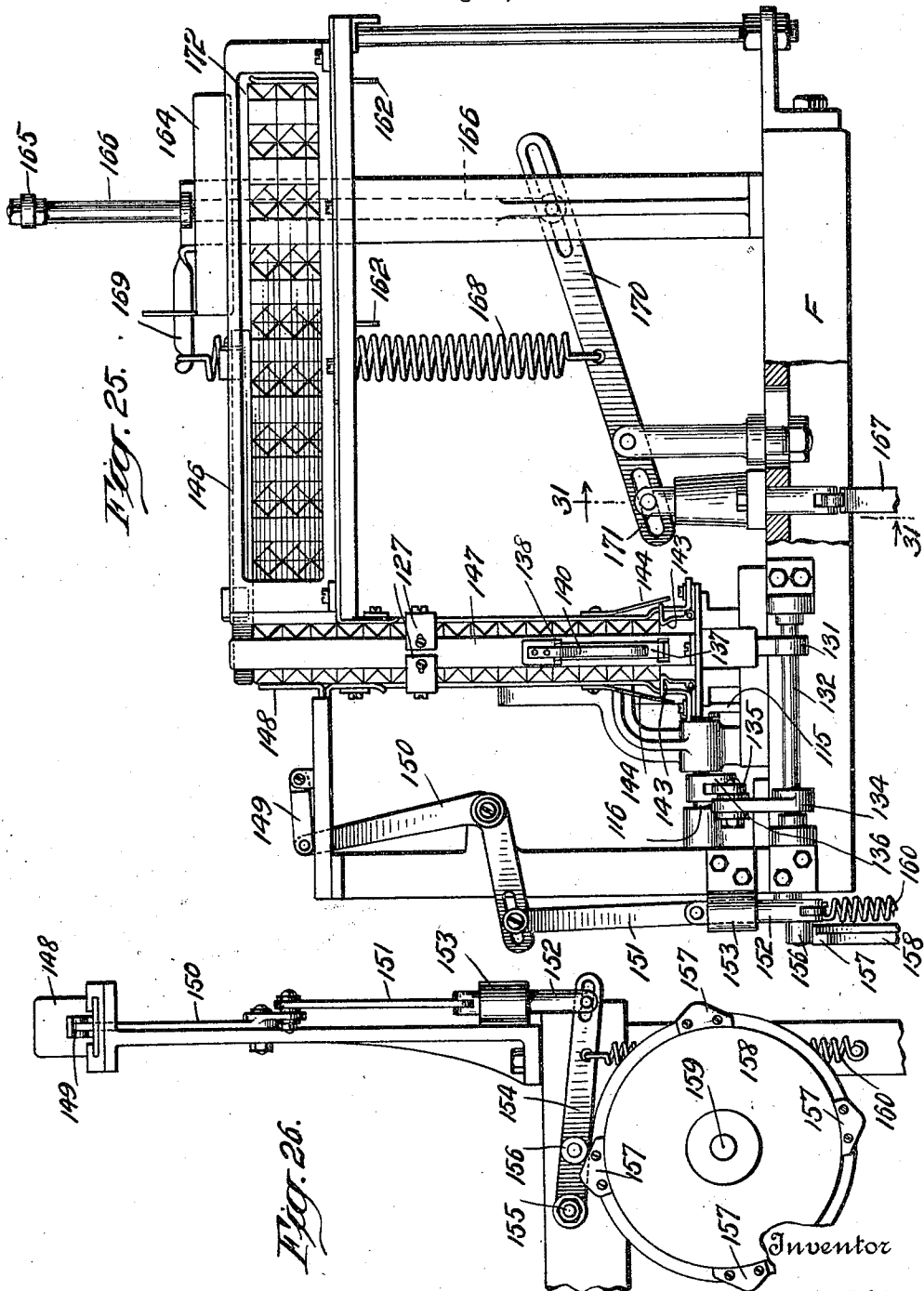
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 9



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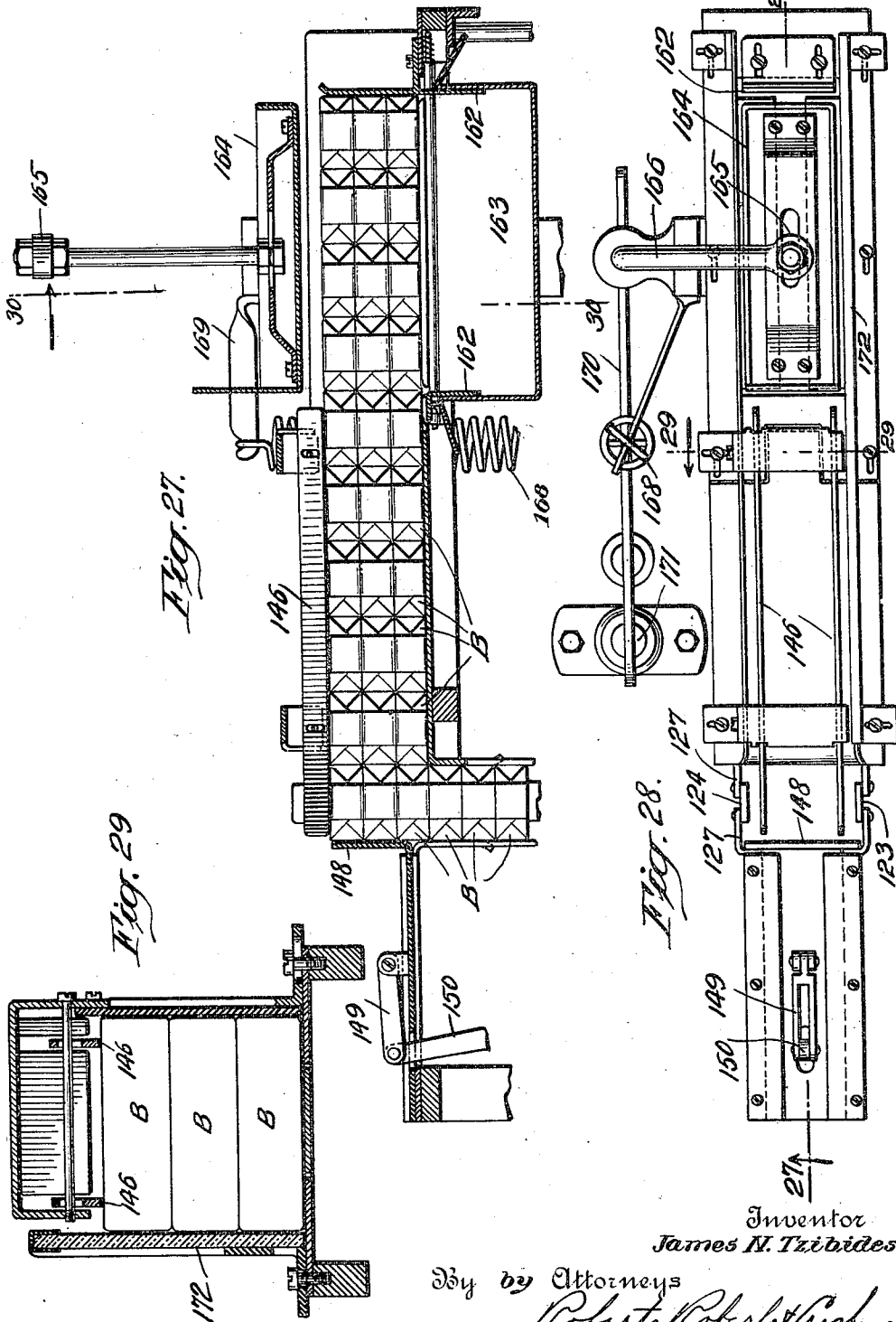
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MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 10



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Sept. 4, 1923.

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1,467,018

MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE

Filed Aug. 2, 1920

11 Sheets-Sheet 11

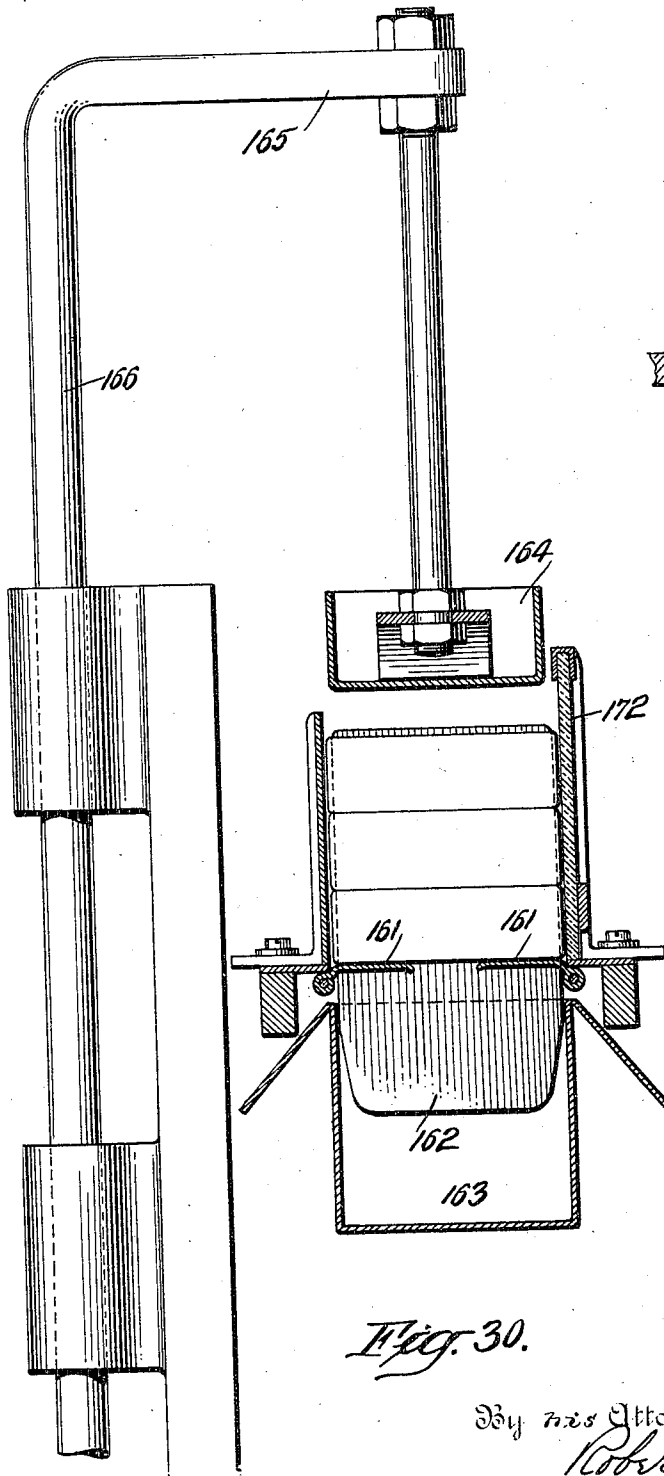


Fig. 30.

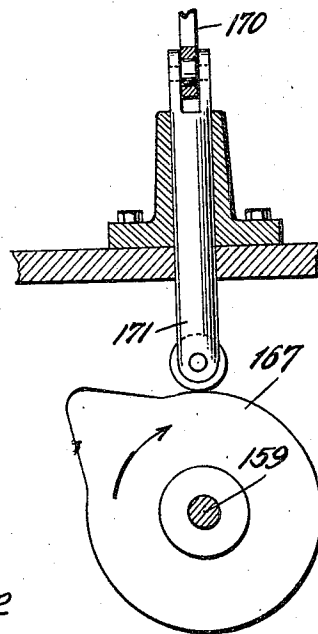


Fig. 31.

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UNITED STATES PATENT OFFICE.

JAMES N. TZIBIDES, OF BROOKLYN, NEW YORK, ASSIGNOR TO R. J. REYNOLDS TOBACCO COMPANY, A CORPORATION OF NEW JERSEY.

MACHINE FOR SEALING CIGARETTE PACKAGES OR THE LIKE.

Application filed August 2, 1920. Serial No. 400,690.

To all whom it may concern:

Be it known that I, JAMES N. TZIBIDES, a subject of Greece, and resident of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Machines for Sealing Cigarette Packages or the like, of which the following is a specification.

This invention relates particularly to a machine for closing cigarette packages of the end-opening pouch type and for applying revenue stamps over the closed ends. However in certain of its aspects it is applicable for use in merely closing cigarette packages or the like of the character referred to and in other of its aspects it is applicable for use in applying revenue stamps or other stamps or labels to packages or boxes other than the character referred to.

Cigarette packages of the end-opening pouch type are usually formed of paper, sometimes being lined with tin foil, and before the cigarettes are placed in the package one end is left open. After the cigarettes have been packed in the package the projecting end of the package is folded inwardly in much the same way as any paper bag if folded in closing same. The folding operations usually consist in first folding the narrow sides of the projecting portion of the bag inwardly and then folding inwardly over the first folds the wider sides of the projecting ends, which sides project upwardly in the form of flaps after the narrow sides have been folded inwardly. The present machine is intended to receive the packages after they have been filled with cigarettes and after the ends have been folded over but not secured, in which condition the folded ends spring partly open by their own elasticity.

The objects of the invention are to provide a machine for folding the flaps of the package into closed position and then to apply the revenue stamp over the closed end or otherwise secure flaps in closed position. Other objects are to provide improved means for affixing the stamps to the packages, for delivering the packages to the stamp affixer and for conveying the package from the stamp fixer to a suitable receiver or packaging machine.

In order clearly to disclose the nature of the invention I have shown one embodiment

by way of illustration in the accompanying drawings in which—

Fig. 1 is a top plan of the machine showing the feed end broken away and the gear casing removed;

Fig. 2 is a vertical longitudinal section through the center portion of the machine, the section being taken on line 2—2 of Fig. 1;

Fig. 3 is a horizontal section on line 3—3 of Fig. 2;

Fig. 4 is a vertical transverse section on line 4—4 of Fig. 2;

Fig. 5 is a vertical longitudinal section of the delivery end of the machine with the elevator in uppermost position, the section being taken on line 5—5 of Fig. 1;

Fig. 6 is a front elevation of the elevator at the delivery end of the machine, the elevator being shown in lowermost position;

Fig. 7 is a view similar to Fig. 6 showing the elevator in uppermost position;

Fig. 8 is a view similar to Fig. 5 showing the elevator in lowermost position;

Fig. 9 is a horizontal section on line 9—9 of Fig. 5;

Fig. 10 is a vertical transverse section on line 10—10 of Fig. 9;

Fig. 11 is a vertical longitudinal section on line 2—2 of Fig. 1;

Fig. 12 is a horizontal section on line 12—12 of Fig. 11;

Fig. 12^a is an elevation of the rotary stamp gripper cam;

Fig. 13 is a horizontal section on line 13—13 of Fig. 11;

Fig. 14 is a vertical central section of the rotary stamp gripper;

Fig. 15 is a side elevation of the stamp flexer showing a cigarette box in operative relationship thereto;

Fig. 16 is a peripheral elevation of the glue roll;

Fig. 17 is a section on line 17—17 of Fig. 11;

Fig. 18 is a vertical transverse section on line 18—18 of Fig. 11;

Fig. 19 is a vertical transverse section on line 19—19 of Fig. 5;

Figs. 20 to 23 inclusive are diagrammatic figures showing successive stages of applying the revenue stamp to a cigarette box;

Fig. 24 is a plan view of a revenue stamp showing the area to which glue is applied;

Fig. 25 is an elevation of the delivery end of the machine, the parts being broken away or shown in section;

Fig. 26 is a rear elevation of the delivery end of the machine (left-hand end of Fig. 25);

Fig. 27 is a vertical transverse section on line 27—27 of Fig. 28;

Fig. 28 is a top plan of the delivery end of the machine;

Fig. 29 is a vertical section on line 29—29 of Fig. 28;

Fig. 30 is a vertical section on line 30—30 of Fig. 27; and

Fig. 31 is a vertical section on line 31—31 of Fig. 25.

The particular embodiment of the invention chosen for the purpose of illustration comprises a frame F carrying a receiving table R at the right-hand end thereof, and packaging mechanism P at the left-hand end thereof and having a chain conveyer C for conveying the cigarette boxes or the like from the receiving end of the machine to the delivery end thereof. The chain conveyer is preferably similar to that disclosed in my prior Patent No. 1,350,393, granted August 24, 1920. At the front of the machine (bottom of Fig. 1) the frame carries a stamp receiver S into which may be stacked a plurality of sheets of revenue stamps. At the left-hand end of the stamp receiver S is mounted on frame F mechanism E for feeding revenue sheets one at a time and step-by-step from the receiver S to the left. A cutter A is mounted to reciprocate vertically at the mouth of the receiver S to cut strips of stamps from the sheet each time the sheet is advanced. A gripper G is mounted to reciprocate transversely of the machine to transfer individually stamps from the aforesaid strips to a position to be picked up by the rotating gripper H. The gripper G is reciprocated by the cam-roll I and is opened and closed by cams J and K on the shaft L carrying the cam roll I. All of this mechanism is fully described and claimed in my prior Patents No. 1,302,735, granted May 6, 1919 and No. 1,347,134, granted July 20, 1920, and for the purpose of the present application requires no further description.

The mechanism for delivering the cigarette boxes to the chain conveyer C is constructed as follows: A hopper 1 is arranged above the conveyer chain C at the left-hand end of the receiving table R in position to receive cigarette boxes as they are fed along a runway on table R, the table R being disposed at a higher level than the conveyer chain C. The hopper 1 may be constructed in various ways, but as shown in the drawings it comprises rear and front uprights 2 and 3, a left-hand upright 4 and a right-hand wall 5. Spring members 6 and 7 are

mounted on the uprights 2 and 3 by means of slotted arms 8 so as to be adjusted to guide the boxes and prevent them from turning or wedging. The rear upright 2 terminates at 8' (Fig. 2) and immediately therebelow an arm 9 is pivoted to swing horizontally on the pivot 10, the arm having a presser portion 11 adapted to engage the rear side of the second box from the bottom of the stack in the hopper and press it against the forward upright 3, thereby holding the said box and all the boxes above it from dropping while the lowermost box is being carried from beneath the stack by one of the lugs 12 on the conveyer chain. After the lowermost box has passed completely from beneath the stack the arm 9 swings out to allow the boxes in the hopper to drop. The arm 9 is yieldingly held in position by spring 33 and is oscillated at the proper times by means of the vertically reciprocating rod 13 which has a cam surface 14 (Fig. 4) adapted to engage its forward side at the left of the pivot 10.

The table R is provided with a runway bounded on the front by a shoulder 15 and on the rear by a vertically disposed rail 16 (Fig. 1). Sliding on the table in the bottom of this guide-way is a belt 17 which passes downwardly through openings in the table over rollers 18, the left-hand roller being shown in section in Fig. 2. The belt 17 is driven from shaft 26 (Fig. 2) through chain 32 and sprockets 30 and 31. At the forward end of the guide-way is provided a transverse shoulder 19 which projects somewhat above the level of the belt 17 so as to engage the foremost box and stop the advance of the boxes resting on the belt, as shown in Fig. 2. Immediately behind the shoulder 19 is provided a vertical reciprocating lifter 20 which is mounted on the upper end of the rod 13 above referred to. The rod 13 slides in guides 21 and 22 and is yieldingly pulled downwardly by a spring 23 anchored at its upper end to the rod and at its lower end to the fixed guide 22. A cam roller 24 is mounted on the lower end of the rod 13 in position to ride on the cam 25 fixedly mounted on shaft 26, the cam 25 being shaped to lift the rod 13 once every revolution of shaft 26. When the rod 13 is lifted the lifter 20 raises the foremost box to the level of the shoulder 19 so that the foremost box may pass over the shoulder 19. The lugs 12 of the chain conveyer C are so spaced with relation to the velocity of the driving shaft 26 that one box is caused to fall into the hopper for every box that is moved from the bottom of the hopper. The belt 17 is caused to travel somewhat faster than necessary so as to feed the boxes against the shoulder 19 somewhat faster than they are delivered from the table, the boxes sliding on the belt 17 after the fore-

most box engages the shoulder 19 and until the foremost box is lifted by lifter 20.

As shown in Fig. 1 I preferably provide a pair of springs 27 adapted to engage the opposite sides of the foremost box just before it is pushed off the table R and a second pair of springs 28 disposed somewhat in the rear of the springs 27. The springs 27 are arranged to prevent the foremost box from tipping off the table when it engages the shoulder 19 and to steady it while it is lifted by the lifter 20 and advanced to the edge of the table. These springs are also positioned and tensioned so as to cause the box to tip off the table and fall flatwise on the top of the stack in the hopper 1. The springs 28 are intended to serve as adjustable brakes but are so tensioned that when the foremost box is lifted over the shoulder 19 all the boxes may move forward with a belt 17. I also preferably provide a pair of overhanging flanges 29 adapted to prevent the boxes immediately in the rear of the foremost box from being lifted by frictional engagement with each other and with the foremost box when the foremost box is lifted by lifter 20. The flanges 29 gradually bend inwardly at the top until their upper ends are inclined at an angle of approximately 30° to the horizontal, and the rear ends of these flanges are curled upwardly so that the forwardly projecting flaps of end-opening cigarette boxes of the pouch type may ride under these flanges without being disarranged.

The conveyer chain C passes over sprocket wheels 34 and 35 at its opposite ends and intermediate the sprocket wheels its upper side rests on a table 36 vertically adjustable on a fixed table 37 (Fig. 2). Over the conveyer C are mounted box guides 38 with a space therebetween into which projects the lugs 12 on the chain. The chain C is driven by the sprocket 35 which in turn is driven from shaft 38 and through chain 112 running over idlers 113 and 114, the shaft 38 connecting with the main driving shaft 39 through a set of bevel gears 40 (Fig. 1).

The mechanism for applying the revenue stamps to the cigarette boxes is disposed above the conveyer C approximately midway between the chain sprockets and comprises in general the aforesaid gripper G which reciprocates transversely above the belt, a rotary gripper H fixed on the shaft 39, a glue roll 40, a glue-pot 41, a guide 42, a pair of arms 43 pivoted at 44 and a pair of springs 45 for yieldingly urging the arms 43 downwardly. Intermediate the transversely reciprocating gripper G and the rotary gripper H is a pair of spaced fingers 46 and 47 arranged so that the stamp *x* (Fig. 12) is stripped or flexed as it is pulled therebetween by the rotary gripper.

The rotary gripper H comprises a body-portion 48 (Figs. 11, 12 and 14) fast to the

shaft 39 and a pair of jaws 49 pivotally mounted on the body 48 by means of small shafts 50 and 51. The shaft 51 is provided with a reduced end fitted into a socket in the end of shaft 50. A pin 52 extends through the telescoped portions of shafts 50 and 51 and the ends of the pin 52 are disposed in circumferentially disposed slots in the tubular end of shaft 50 so as to permit limited rotation of one pin relative to the other pin (Fig. 14). The jaws 49 are fixedly connected to the shafts 50 and 51 respectively by means of set screws 53 (Fig. 13). Springs 54 are arranged to swing the jaws 49 against the fixed jaws 55 on the body 48. A cam finger 56 is secured to the outer end of pin 50 in position to engage cam finger 57 fixedly mounted in the path thereof, the finger 57 being formed on a collar surrounding the shaft 39 but fast to the frame and not to the shaft.

As the rotary gripper reaches the position shown in Fig. 11 the jaws 49 are opened and the tail end of the stamp *x* held by the rotary gripper H is pressed against the forward end of the upper side of the box. As the rotary gripper continues its movement the rear end of the stamp *x* held by the reciprocating gripper G is gripped by the jaws 49 and 55, the jaws of the gripper G being opened an instant before the jaws 49 close as the finger 56 leaves finger 57. As the rotary gripper continues to rotate the pivoted guides 43 engage the edges of the stamp and hold it in contact with the periphery of the body 48 of the gripper. The glue roll 40, whose periphery is supplied with glue from pot 41 controlled by valve 58, contacts with the central portion of the stamp between the guides 43 applying a coat of glue over the central portion *x'* of the stamp shown in Fig. 24.

The peripheral surfaces 60 of the rotary gripper H are relatively narrow, as shown in Figs. 12 and 13, so that the stamp contacts with the body 48 only throughout these marginal surfaces 60. The glue roll is substantially equal in width to the space between the marginal surfaces 60, so that if a stamp is not picked up by the rotary gripper the glue roll will not contact with the rotary gripper. The peripheries of the pivoted dogs 49 do not extend quite out to the circumference of the body 48 so as not to contact with glue on the roll 40. Thus no glue contacts with the rotary gripper in the event that it does not carry a stamp, thereby avoiding the rotary gripper becoming gummed up. Inasmuch as the glue roll 40 engages the stamp throughout its central unsupported portion between the marginal surfaces 60 it is essential that the stamp be held in a curved position in contact with the circular periphery 60 by the pivoted guides 43, as otherwise the stamp would flex in-

wardly in the center and not make good contact with the glue roll.

The periphery of the glue roll 40 is narrow and the portion 61 which supplies the spot x' of glue (Fig. 24) has a shorter radius than the rest of the roll so as to pick up a considerable amount of glue in passing the mouth of the glue pot. Thus, while some glue is supplied to the glue roll throughout its entire periphery a considerable amount is supplied only to the recessed portion 61. Thus the spot of glue applied to the stamp would be substantially as shown in Fig. 24, although an inconsiderable amount of glue may be applied at the opposite ends of the rectangular spot x' . As shown in cross-section in Fig. 13 the guide 42 is recessed in the center 62 so as to contact only with the unglued margins of the stamp throughout the surfaces 63 spaced from the surfaces 60 of gripper H to permit the stamp to pass freely therebetween.

As the stamp is pulled between the fingers 46 and 47 it is flexed sharply to cause it to curl downwardly after being applied to the box as shown in Figs. 20 and 21, whereby the stamp will pass beneath certain parts of the machine in transit to the point where it is folded downwardly over the end of the box. However, in order to make sure that the free portion of the stamp does turn downwardly instead of upwardly I may provide an additional device, (Figs. 11, 13 and 15) comprising an arm 64 fixedly mounted on the end of shaft L and an L-shaped spring 65 having a portion 66 extending along the periphery 67 which is concentric with the axis of shaft L. This device is so shaped and timed that the free end of the spring 65 engages the projecting portion of the stamp X immediately in front of the edge of the box so as to flex the stamp sharply downwardly at the corner of the box (Fig. 15).

In order to make sure that the stamp does not stick to the rotary gripper when the jaws 49 open I provide a presser foot 68 pivoted at 69 in a recess in the body 48 of the gripper to push the stamp away from the gripper in the event that the forward end of the stamp, whose rear end is stuck to the box B, has not flipped away from the rotary gripper upon the opening of the jaws 49. The presser foot 68 is controlled by a cam roll 70 rotatably mounted on the end of an arm fast to shaft 69 and arranged to move in a cam groove in a cam disk 71 fast to the frame of the machine. An offset 71' is so located in the cam groove that the presser foot 68 is oscillated in a counterclockwise direction immediately after the jaws 49 open thereby moving the forward end of the stamp x away from the rotary gripper if it has not already flipped away by its own elasticity.

At the delivery end of the chain conveyer is provided a vertical reciprocating elevator 72 fast to a vertical slide 73 sliding in guide 74. As shown in Fig. 19 the elevator 72 has upstanding side-walls 75. Disposed longitudinally of the inner faces of these side-walls are springs 76 which bow inwardly in the middle yieldingly to engage the outer sides of the cigarette boxes. These springs 76 are bent outwardly around the forward ends of the side-walls where they are secured by screws 77 (Fig. 9). Springs 78 are mounted on the side-walls of the elevator to engage the upper side of each cigarette box to hold the box upon the floor of the elevator, the forward ends of the springs 78 being curved upwardly to permit the boxes to be advanced therebeneath by the chain conveyer C. A bracket 79 extends downwardly along the forward side of the elevator and upon the lower end of this bracket is pivotally mounted an arm 80 which carries at its rearward end a vertically disposed plate 81 (Figs. 5, 6, 7, 8 and 19). The plate 81 is pivoted to the arm 80 and extends forwardly into a recess 82 in the rearward end of the elevator. A torsion spring 83 is provided to urge the plate 81 in a clockwise direction (Fig. 5) thereby to hold it against the rear end of the elevator. The upper end of the plate 81 is recessed in the center (Fig. 19) so as not to contact with the gummed surface of the revenue stamp. The forward end of the arm 80 is yieldingly urged downward by means of a spring 84 anchored to bracket 85 depending from the bottom of the elevator (Figs. 6 and 7). A finger 86, which is fixedly mounted on the frame F, (Figs. 9 and 19), extends into the path of the arm 80 to limit the movement of the arm by spring 84. A stop 87 is fixedly mounted on the frame F in position to engage the rearward end of the arm 80 (Figs. 6 and 7). When the elevator is in the lowermost position (Figs. 5, 6 and 19), the pin 86 holds the arm 80 in such position that the upper edge of plate 81 is disposed slightly beneath the level of the floor of the elevator. After the box has been transferred to the elevator from the conveyer into the position shown in Fig. 5 the elevator is timed to rise. As the elevator rises the arm 80 is rotated in a clockwise direction by spring 84 causing the plate 81 to slide upwardly and fold in the lower flap y of the box. As the elevator continues to rise the revenue stamp x and the upper flap y' of the box engage on ledge 88 (Fig. 5), which constitutes a wiper, and are folded downwardly over the flap y . As the elevator continues to rise the arm 80 engages the stop 87 (Fig. 7) so that the upper edge of the flap 81 does not rise above the level of the stationary table 89. After the elevator has reached uppermost position

the box is slid from the elevator to the table 89 by the arm 90 pivoted at 91 on a fixed bracket 92, the arm 90 having a transverse foot 93 adapted to engage the bottom of the box. As the box is slid on to the table 89 the projecting end of the stamp is wiped along the lower side of the box when it sticks by virtue of the glue thereon. Mounted on the top of the stationary guide 74 is a bracket 94 having horizontal arms 95 and 96 in which a rod 97 slides vertically (Figs. 5, 8 and 19). The rod 97 is provided with a shoulder 98 adapted to engage the arm 96 and limit the downward movement of the rod, a spring 99 being provided yieldingly to pull the rod 97 downwardly. The rod 97 carries at its lower end a presser-foot 100 and an adjustable stop 101 which is adapted to engage a stop 102 on the vertical slide 73 (Fig. 8). The rod 97 also carries a cam roll 103 adapted to be engaged by a cam surface 104 of an oscillating arm 105. As the elevator rises from its lowermost position shown in Fig. 5 the portion of the box bearing the end of the revenue stamp engages the presser foot 100 and lifts the rod 97 against the action of spring 99. The pressure of foot 100 against the stamp prevents the same from being pulled loose from the box as the stamp wipes past the ledge 88. After the elevator has reached uppermost position the arm 105 swings forwardly together with arm 90, thereby causing the cam 104 to lift the arm 97 out of contact with the revenue stamp after which the box is transferred to the table 89 as above described. After the arm 105 is swung back until the arm 104 clears cam roll 103 the arm 97 is pulled downwardly by the spring 99 until the collar 98 engages the bracket 96. The stop 102 is so positioned on the vertical slide 73 that it engages the stop 101 on the presser-foot. After the presser-foot has engaged the revenue stamp with a pressure sufficient to hold the same, the stop 102 thereby limiting the amount of pressure applied by the foot 100 to the box so as not to crush the cigarettes. By adjusting the screw 101 the amount of this pressure can be varied.

The mechanism for oscillating the arms 90 and 105 comprises a cam disk 106 fast on shaft 107, the disk 106 having a cam groove 108 in its rear side to receive the cam roll 109 on the arm 105. The right-hand end of the arm 105 is fixed to receive the roller 110 on the shaft 107 vertically to position the right-hand end of the arm. The shaft 107 is driven from the shaft 38 above referred to through the medium of idler gear 111.

The elevator slide 73 is oscillated up and down by means of a slotted arm 115 pivoted on shaft 116, the slot in the arm being adapted to receive a pin projecting from the head 73. The shaft 116 is arranged to

be oscillated by a cam disc 117 on shaft 38 (Fig. 1), through the medium of a link 118 and a crown arm 119, the cam disc 117 and link 118 being similar to cam disc 106 and arm 105 described.

As the box is moved from the elevator to the table 89 the lower end of the revenue stamp is wiped under the box by means of ledge 88 thereby finally securing the stamp over the mouth of the box. A pair of springs 120 press downwardly on the box while the box is on the table 89.

After the box has reached the table 89 the stamps are entirely affixed and the box may be delivered to any suitable receiver, as for example, a straight runway or a flat table. However, I preferably deliver them to a packaging device now to be described, which forms the subject-matter of my co-pending application, Serial No. 400,691 filed on even date herewith.

At the left-hand end of the table 89 is arranged a vertical chute 147 comprising front and rear walls 121 and 122 and side walls 123 and 124, the walls 121, 122 and 123 being mounted on a base plate 125 the wall 124 being mounted on a bridge piece 126 extending over the table 89. The walls 121 to 124 are secured together near the top by means of U-shaped brackets 127. A second elevator 128 is arranged to reciprocate vertically in the lower end of the aforesaid chute from the lowermost position shown in Fig. 8 to the uppermost position shown in Fig. 5. The elevator 128 is provided with a depending bracket 129 carrying a roller 130 on its lower end. An arm 131 pivoted to shaft 132 is arranged to engage the roller 130 to lift the elevator, spring 133 being provided to maintain the roller 130 in contact with the arm 131. The shaft 132 is arranged to be rotated by the arm 134, having a slot fitting over a pin on the end of link 135. The link 135 is connected at its opposite end to bifurcated arm 136 fast to shaft 116 (Fig. 1). This system of arms and links is timed to lift the elevator 128 during the interval of time elapsing between the transfer of successive boxes from the elevator 72 to the table 89.

A catch 137 is pivoted at 138 to the upright 123 and the lower end of catch 137 is provided with an offset portion 139 extending inwardly through an opening in the upright 123. A spring 140 urges the catch into the position shown in Fig. 5 and the lower end of upright 123 is offset outwardly to receive the end 139 of the catch when it is pressed to the left by a box. The left-hand side of the elevator is recessed to receive the offset end 139, as shown in Fig. 5. When the elevator 128 lifts the boxes the offset end 139 snaps in beneath the lowermost box and holds the lower end of the revenue stamp in position until the next

box is pressed upwardly thereagainst so as to prevent the end of the stamp from swinging away from the box by its own elasticity.

As shown in Fig. 10 a pair of catches 141 are pivoted at 142 and are provided with shoulders 143 adapted to hold the boxes in elevated position in the aforesaid chute, when the elevator 128 moves downwardly. The catches 141 are provided with openings to receive the uprights 121 and 122, which uprights serve to limit the inward and outward movement of these catches. Springs 144 are arranged to yieldingly urge the catches inwardly into the holding position shown in Fig. 10. The shoulders 143 slope outwardly from top to bottom thereby forming cam surfaces adapted to be engaged by the box as it is lifted by the elevator to move the catches out of the path of the box until the box has passed thereabove after which the catches are snapped inwardly by the springs 144.

Referring particularly to Figs. 25 to 31 a horizontal chute P (Fig. 1) extends from the upper end of chute 147 toward the front of the machine. A horizontal slide 148 is arranged to push the uppermost set of three boxes in the vertical chute latterly into the horizontal chute. The slide 148 is arranged to be actuated at suitable intervals through the medium of a link 149, a bell crank 150, a link 151, a rod 152 sliding in bracket 153, an arm 154 pivoted at 155 and carrying a cam roll 156 adapted to be engaged by cams 157 spaced 90° apart on the cam wheel 158 fast to shaft 159, a spring 160 being provided to pull the arm 154 downwardly. The horizontal chute 146 is provided with an opening in its lower side at its outer end large enough to permit four sets of three boxes in a set to pass downwardly therethrough. This opening is partially closed by a pair of doors 161 (Fig. 30) which are yieldingly held closed by springs but which may be swung downwardly out of the path of the boxes by the downward pressure thereon. Depending lips 162 are provided at the opposite ends of the aforesaid opening, these lips being adapted to support a carton 163 by frictional engagement as shown in Figs. 27 and 30. A vertically reciprocating presser member 164 is mounted on an arm 165 of the vertical reciprocating rod 166 to press the aforesaid four sets of boxes downwardly through the opening in the bottom of the horizontal chute into the carton. The vertical reciprocating rod 166 is arranged to be actuated by a cam 167 (Fig. 31), cam 167 being mounted on shaft 159 above referred to. A spring 168 connects at its upper end to a fixed bracket 169 and at its lower end to the link 170 connecting the rod 166 with the plunger 171.

As shown in Figs. 25 and 29 the side wall

of the horizontal chute covering the stamped end of the boxes is formed of glass, whereby the condition and position of the boxes in the chute may be readily observed. In order to hold the boxes loosely compressed in the horizontal chute P, two bars 146 are arranged to rest on the boxes, the bars being loosely positioned by transverse pins passing through vertical slots therein (Fig. 27).

While the invention has been described in connection with its specific application to the treatment of cigarette boxes or packages it may, in certain of its aspects, be applied to the handling of other packages.

The terms "vertical," "horizontal," "front," "rear" and the like, as herein employed, are used in their broad sense as connoting relation positions and locations and not as defining exact positions. For example, the hopper 1 and chute 147 are described as vertical, but they may obviously be inclined more or less relatively to the vertical and still function as described.

I claim:

1. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, the combination of means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, and means for concomitantly closing the open ends and folding the stamp over said ends.
2. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, the combination of means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, and mechanism for concomitantly closing the open end of each package and folding the stamp thereover, said mechanism including a wiper arranged simultaneously to fold the stamp and one flap of each package across the end of the package.
3. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, the combination of means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, mechanism for concomitantly closing the open end of each package and folding the stamp thereover, said mechanism including a wiper arranged simultaneously to fold the stamp and one flap of each package across the end of the package, and means for folding another flap of the package across the open end prior to said simultaneous folding of the stamp and the other flap.

4. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, the combination of means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, and mechanism for concomitantly closing the open end of each package and folding the stamp thereover, said mechanism including a wiper arranged simultaneously to fold the stamp and one flap of each package across the end of the package, and another wiper arranged to fold the free end of the stamp along the opposite side of the package.

5. A machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, comprising means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, a wiper, and means for moving the package past the wiper to fold the stamp and one flap across the open end of the package.

6. A machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, comprising means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, a wiper, means for moving the package past the wiper to fold the stamp and one flap across the open end of the package, and means for folding the opposite flap of the package across the open end prior to the folding of the stamp and aforesaid flap.

7. A machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, comprising means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, a wiper, means for moving the package past the wiper to fold the stamp and one flap across the open end of the package, a second wiper, and means for moving the package past the second wiper to fold the free end of the stamp along the opposite side of the package.

8. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, comprising means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, an elevator, and a wiper arranged at one side of the path of the elevator so that the stamp and one flap of the package is

folded across the end of the package upon movement of the elevator.

9. A machine of the character described comprising means for applying one end of a stamp to the side of each package adjacent one end, a wiper, means for moving the package past the wiper to wipe the stamp across the end of the package, and means for holding said end of the stamp against said side of the package during the wiping operation.

10. A machine of the character described comprising means for applying one end of a stamp to the side of each package adjacent one end, an elevator for lifting the package, a wiper adjacent the path of the elevator for wiping the stamp across the end of the package, and a presser foot carried by the elevator for holding said end of the stamp against said side of the package during the wiping operation.

11. A machine of the character described comprising means for applying one end of a stamp to the side of each package adjacent one end, an elevator for lifting the package, a wiper adjacent the path of the elevator for wiping the stamp across the end of the package, a presser foot carried by the elevator for holding said side of the package during the wiping operation, and means for automatically moving said presser foot into and out of operative position before and after said wiping operation.

12. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, and a device carried by the elevator for holding another adjacent flap closed while said flap is being wiped into place.

13. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, and a thin presser arranged to hold another adjacent flap closed while said flap is being wiped into place.

14. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, and a thin presser arranged to hold another adjacent flap closed while said flap is being wiped into place and to withdraw from beneath the first flap when the first flap is reaching closed position.

15. A machine of the character described for cigarette packages or the like of the end-

opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, and a device movably mounted on the elevator for temporarily holding another adjacent flap closed while said flap is being wiped into place.

16. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, and a thin presser mounted on the elevator to rise above the elevator, thereby to position another adjacent flap while said first flap is being wiped into place, and to stop before the elevator reaches uppermost position so as not to project above the elevator when the elevator stops.

17. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, a wiper disposed adjacent the path of the elevator to wipe one flap of the foremost end of each package along the end of the package as the elevator rises, an arm mounted beneath the elevator, a slide at one end of the elevator adapted to be raised and lowered by said arm, and means for automatically raising said slide as the elevator starts up and for stopping the slide before the elevator reaches uppermost position, thereby to close another adjacent flap while said first flap is being wiped into place.

18. A machine of the character described comprising means for applying one end or a stamp to the side of each package adjacent the foremost end, a wiper, means for moving the package past the wiper to wipe the stamp across the foremost end of the package, means for yieldingly holding said end of the stamp against said side of the package during the wiping operation, a table adjacent the path of the elevator, and means for sliding the package from the elevator to the table so that the free end of the stamp is wiped along the opposite side of the package.

19. A machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing the stamp thereover, comprising a conveyor arranged to convey the package with the open ends directed forwardly, means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, an elevator positioned at the delivery end of the conveyor to receive packages from the conveyor, and a wiper arranged adjacent the path of the ele-

vator at a level above the conveyor so that said stamp and one flap of the package are folded across the end of the package when the elevator rises.

20. In a machine of the character described for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, the combination of means for closing the open ends of the packages, and means for affixing stamps thereover, said means being coordinated to perform a part of the closing and affixing operations simultaneously.

21. A machine of the character described for cigarette packages or the like of the end-opening pouch type, comprising an elevator, means for applying one end of a stamp to the side of each package adjacent the open end with the body of the stamp projecting beyond the open end, a table arranged adjacent the path of the elevator at a level above the conveyor, the table having a wiper portion adapted to wipe the stamp, and one flap across the end of the package as the elevator rises, and means for sliding the package from the elevator on to the table so that the free end of the stamp is wiped along the opposite side of the package by the table.

22. A machine for closing the ends of cigarette packages or the like of the end-opening pouch type and affixing stamps thereover, comprising a package conveyor for conveying the packages, means associated with the conveyor for affixing one end of a stamp to the upper side of each package with the body of the stamp extending beyond the open end of the package, and means for simultaneously folding the end flaps of the package and the stamp across the open end of the package.

23. A machine for producing cigarette or similar package of the end-opening package type, comprising means for closing the package flaps and means for affixing a stamp over the flaps to hold them closed, said last named means including a movable member with a spring presser thereon adapted to engage the stamp.

24. A machine for producing cigarette or similar packages of the end-opening package type, comprising means for closing the package flaps and means for affixing a stamp over the flaps to hold them closed, said last named means including a member having a face adapted to bear on the portion of the stamp affixed to the package, and a leaf spring projecting beyond said face to bend the projecting portion of the stamp downwardly.

Signed by me at Brooklyn, N. Y., this 26th day of July, 1920.

JAMES N. TZIBIDES.