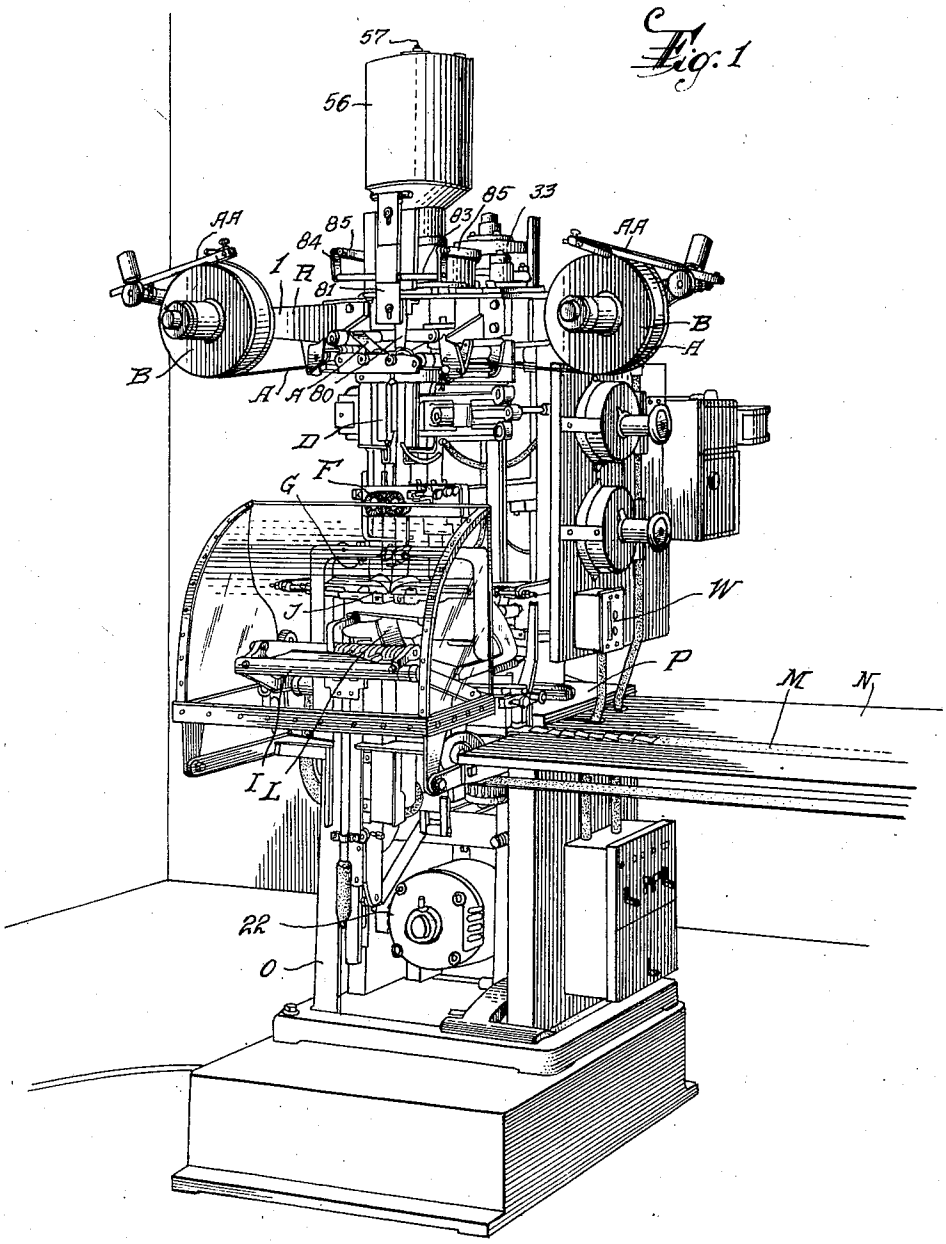
June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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Fig. 1



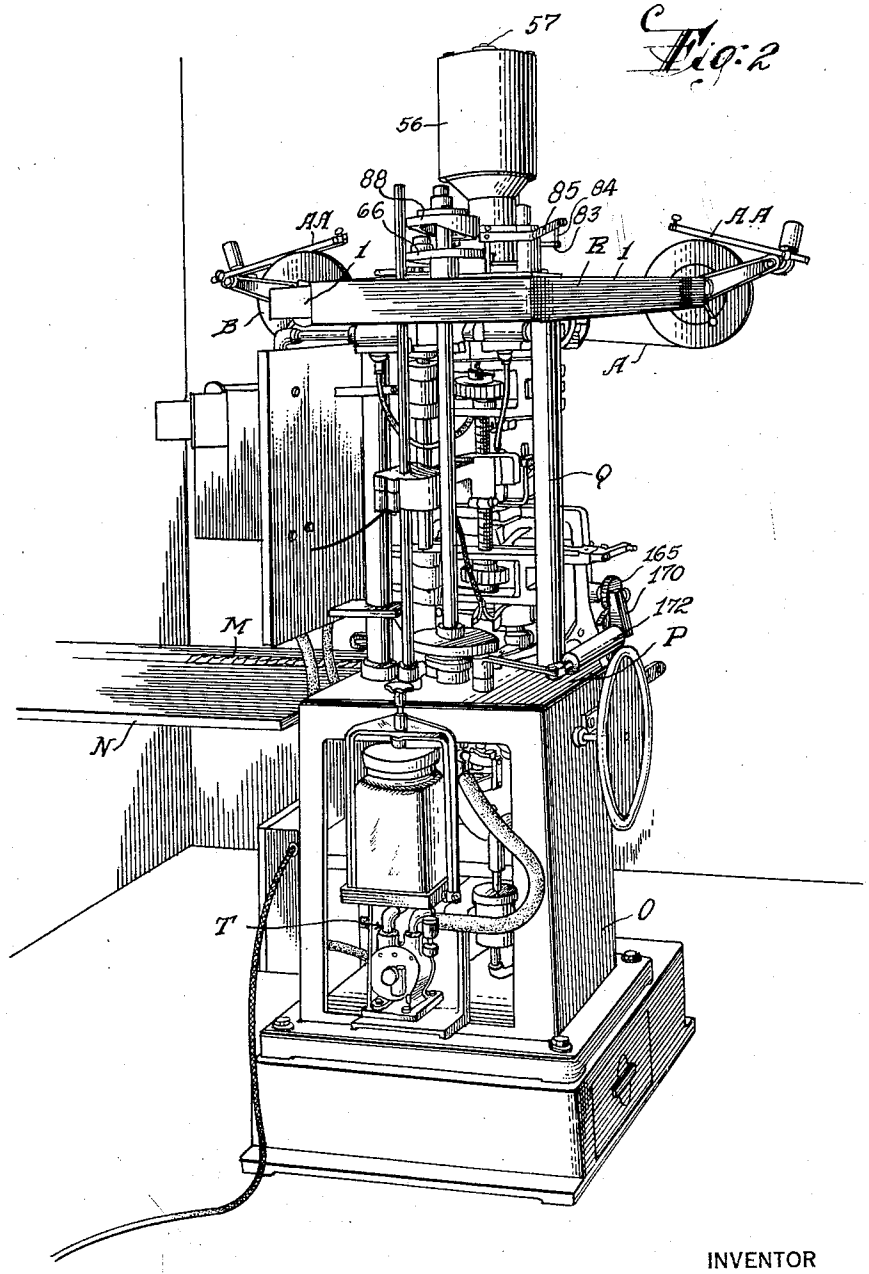
INVENTOR
Leroy L. Salfisberg.
BY
Harry N. Cook,
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

Filed Aug. 17, 1939 18 Sheets-Sheet 2

Fig. 2



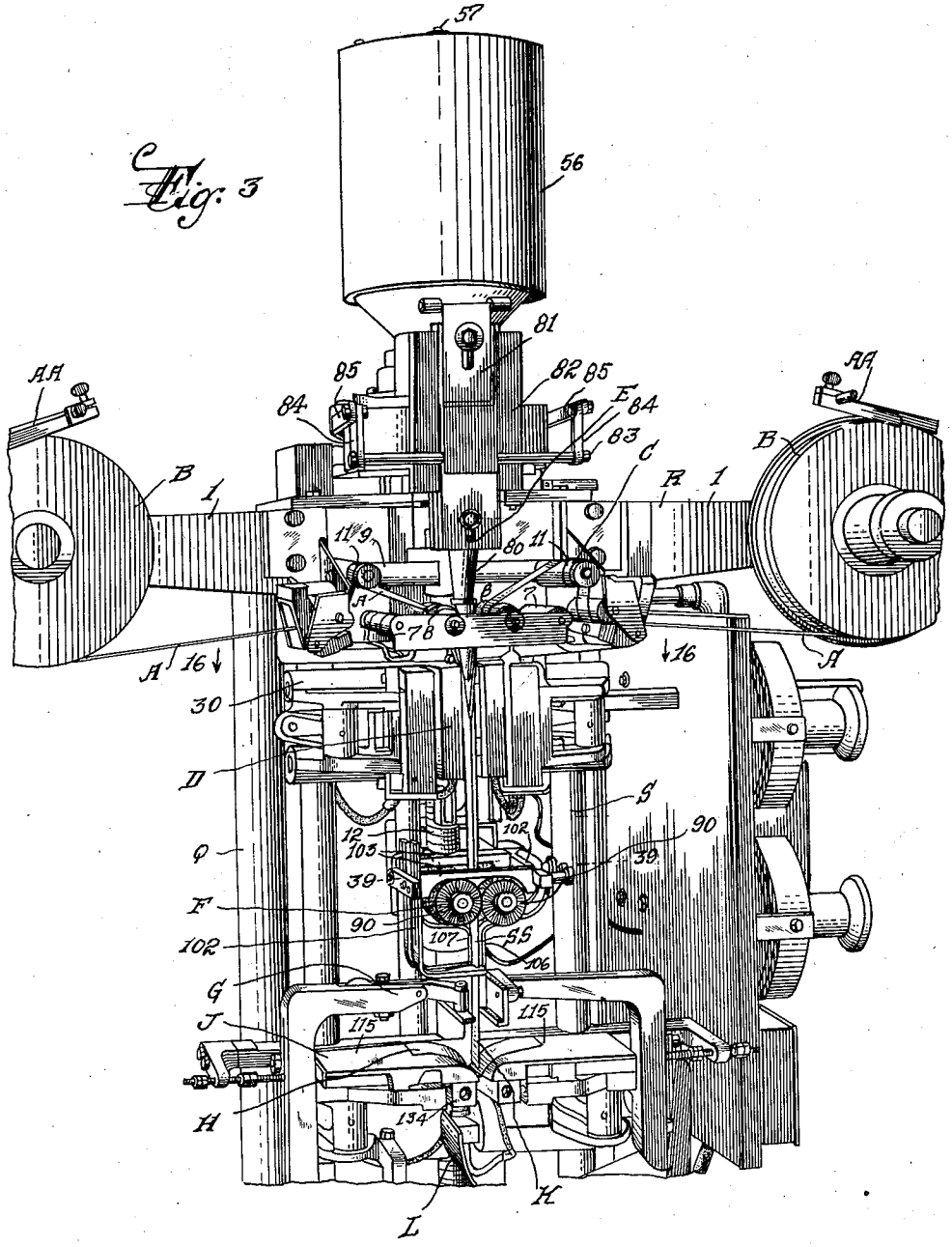
INVENTOR
Leroy L. Salfisberg
BY
Harry D. Cook,
ATTORNEY

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PACKAGE FORMING AND FILLING MACHINE

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Fig. 3



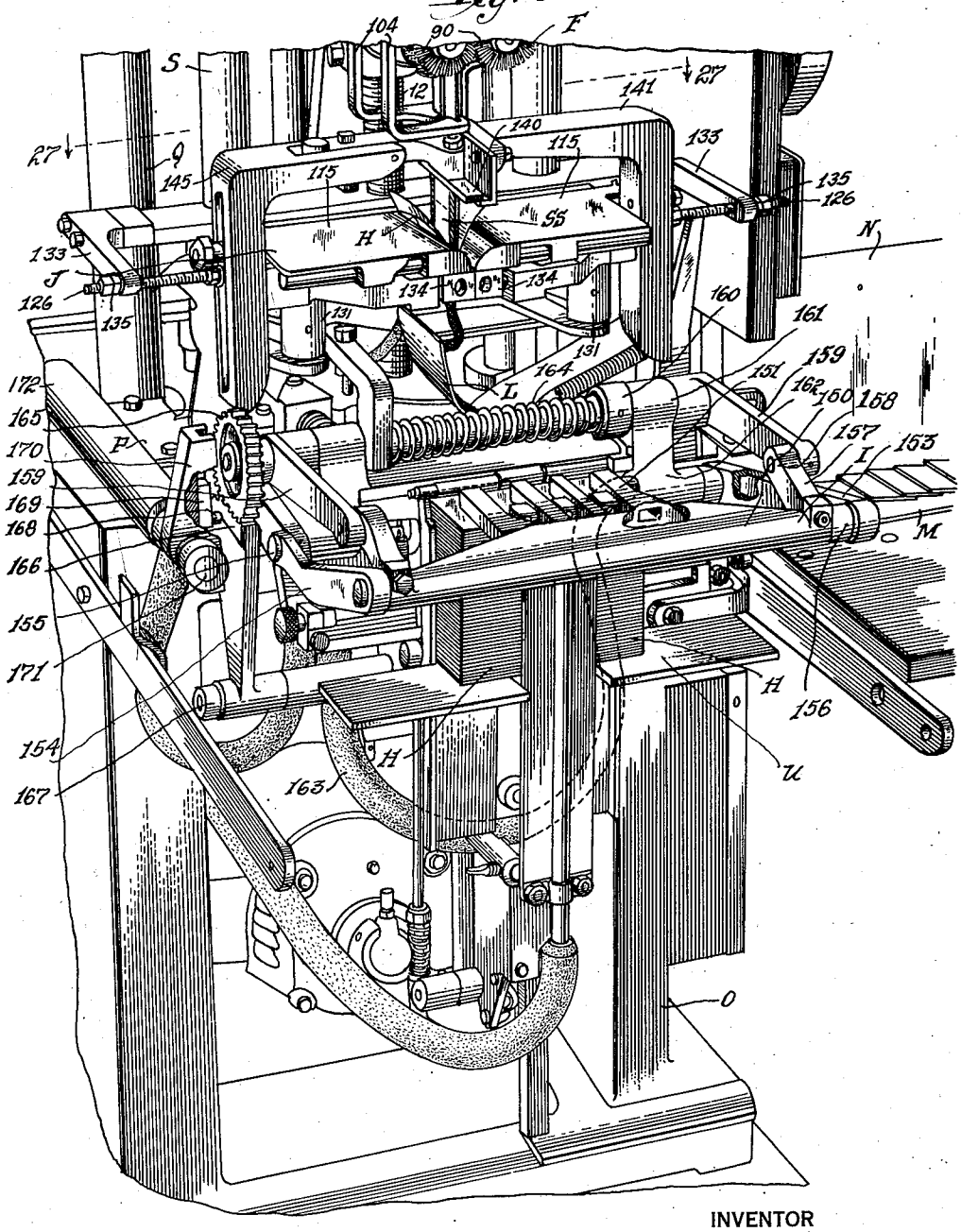
INVENTOR
Leroy L. Salfisberg.
BY
Harry N. Cook,
ATTORNEY

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PACKAGE FORMING AND FILLING MACHINE

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Fig. 4



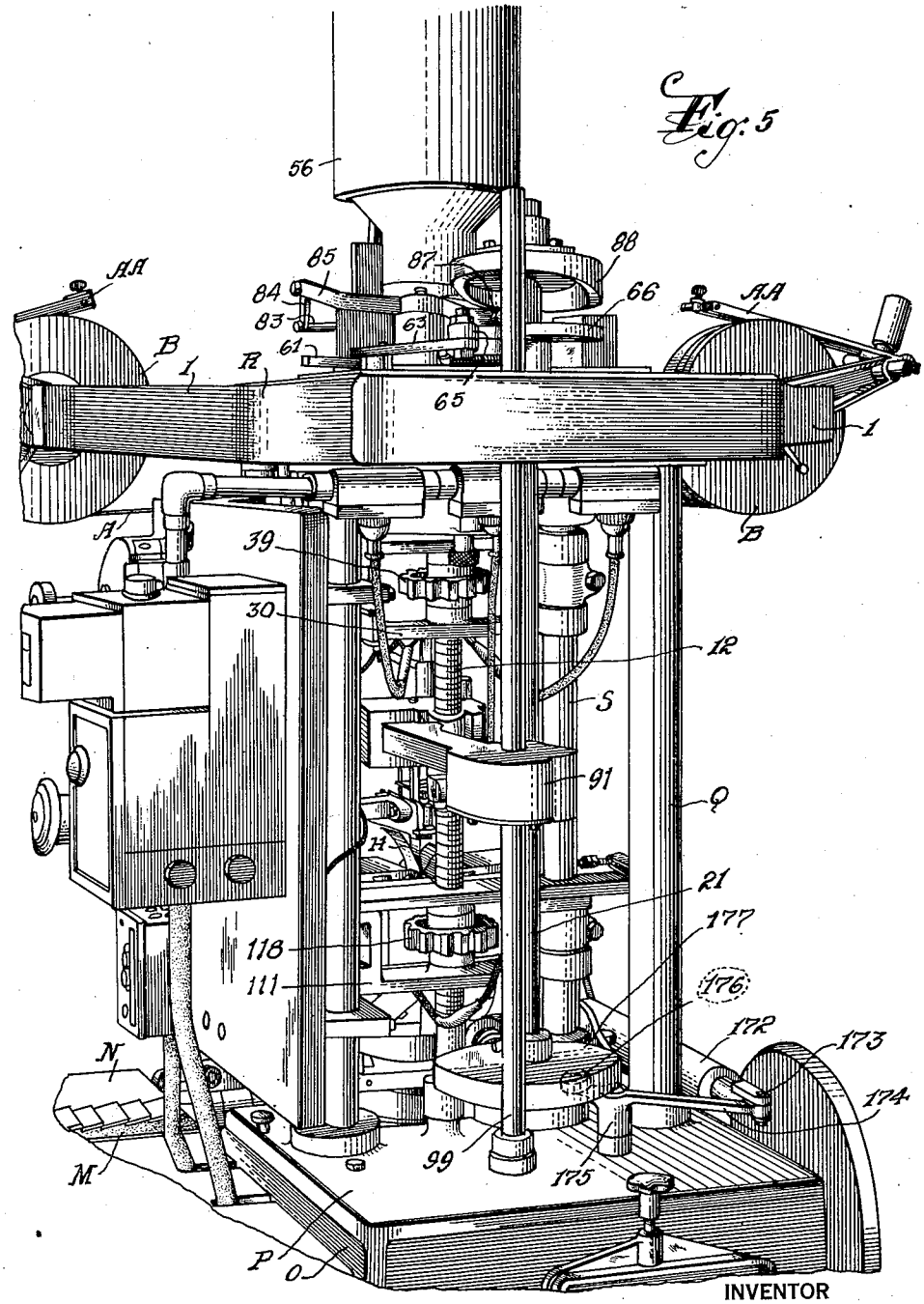
INVENTOR
Leroy L. Salfisberg.
BY
Harry B. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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Fig. 5



INVENTOR
Leroy L. Salfisberg.
BY
Harry B. Mook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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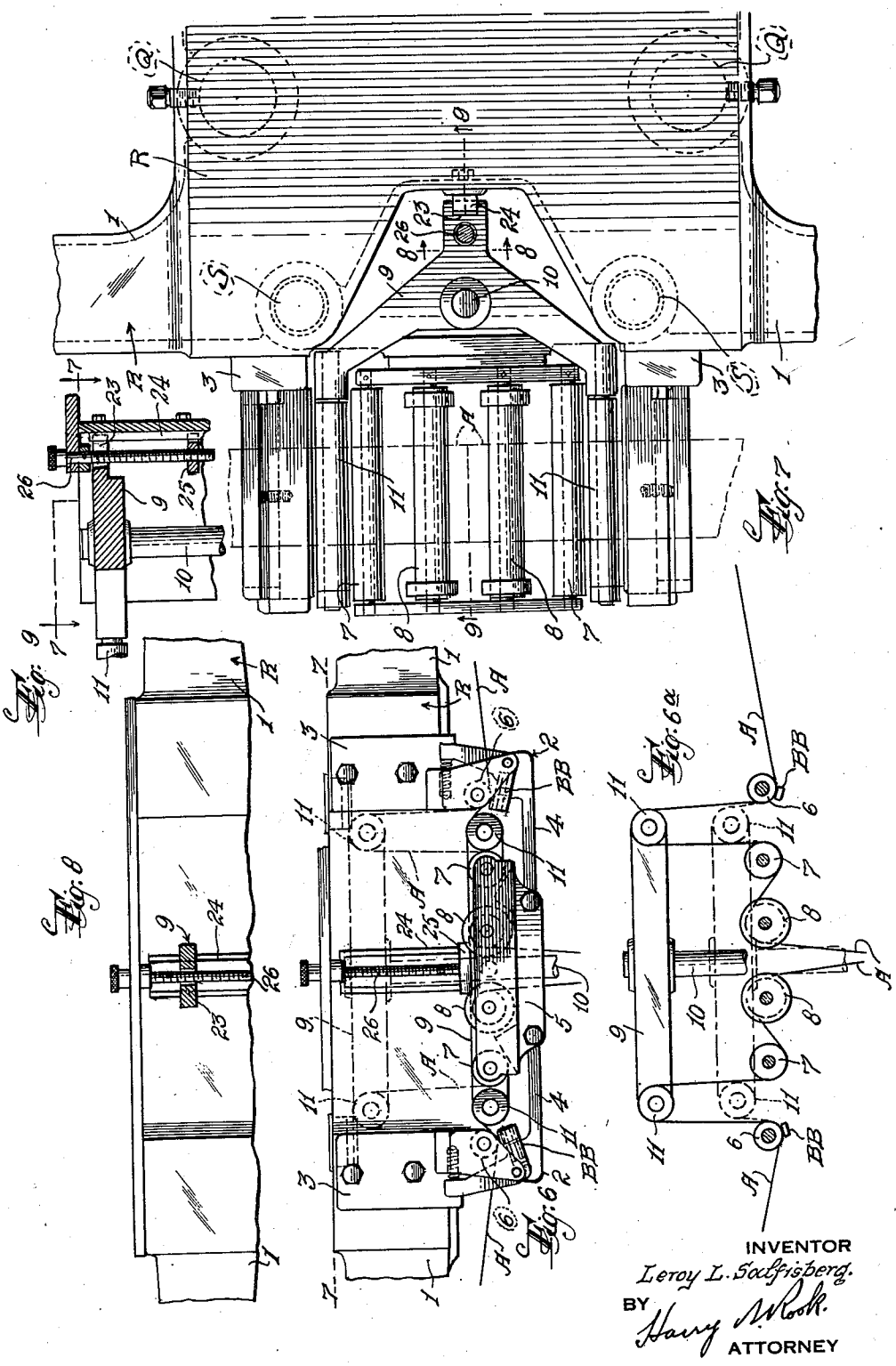


Fig. 7

Fig. 9

Fig. 8

Fig. 6

Fig. 6a

INVENTOR
Leroy L. Salfisberg.
BY Harry N. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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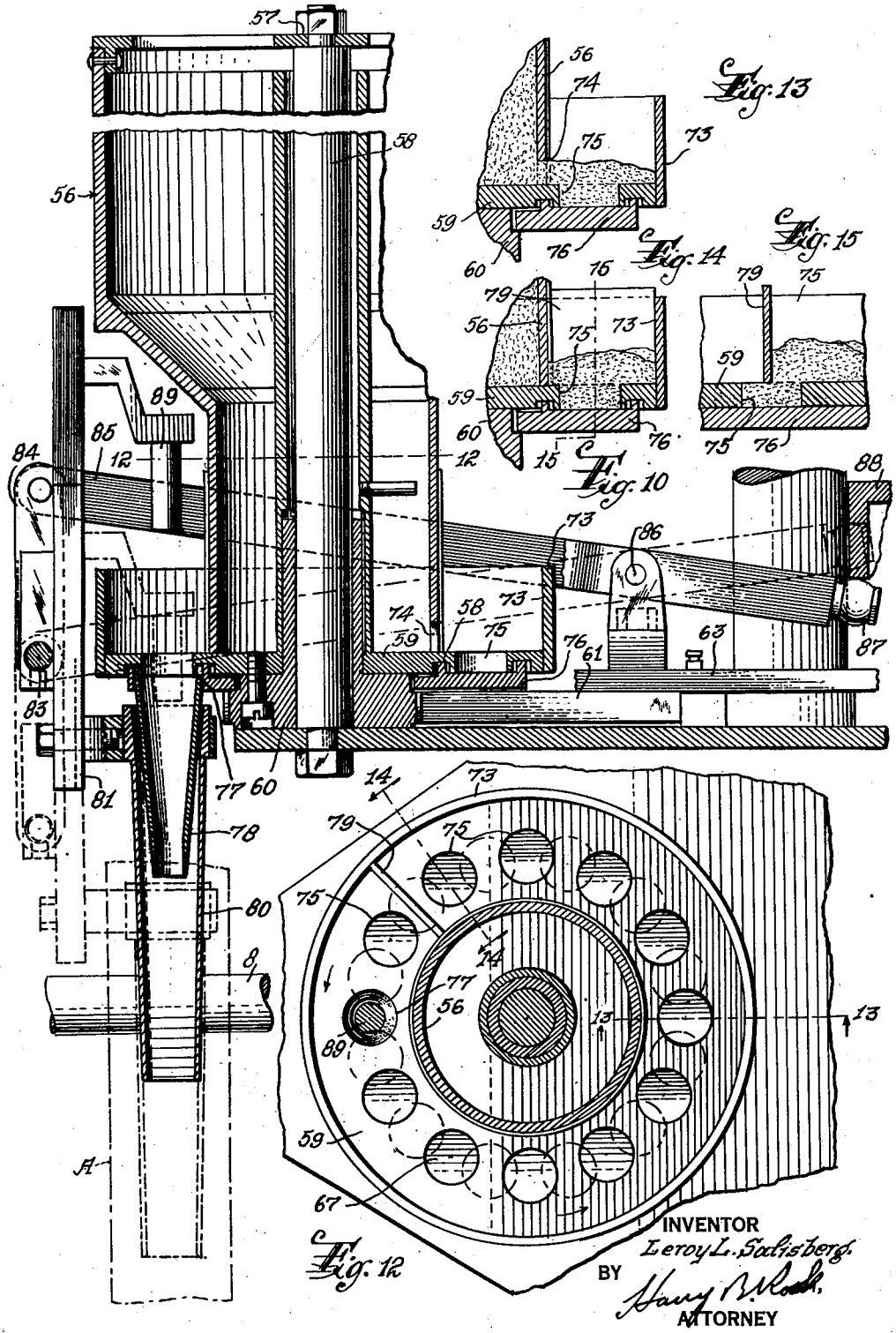


Fig. 13

Fig. 14

Fig. 15

Fig. 10

Fig. 12

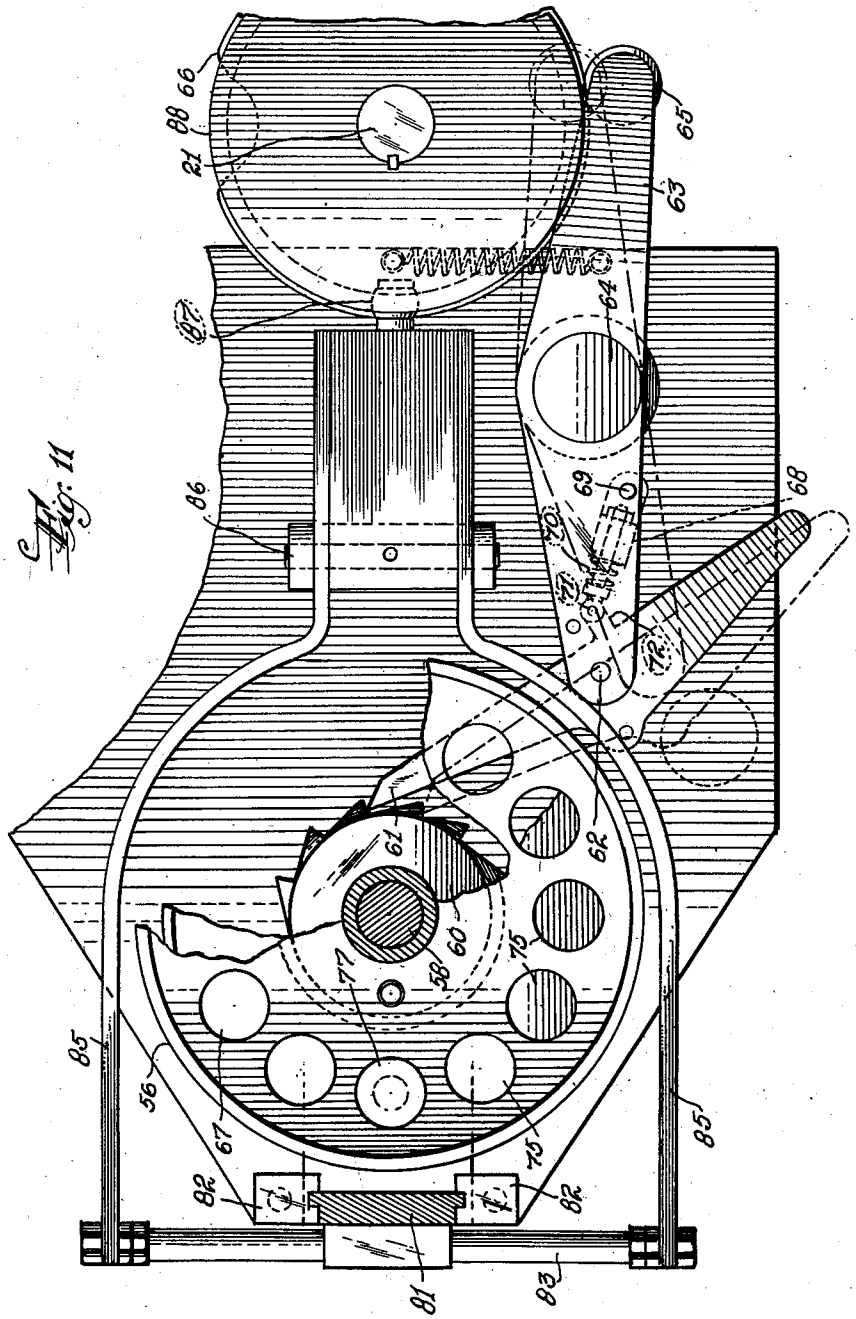
INVENTOR
Leroy L. Salfisberg.
BY
Harry B. Roods.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

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Fig. 11



INVENTOR
Leroy L. Salfisberg.
BY
ATTORNEY

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PACKAGE FORMING AND FILLING MACHINE

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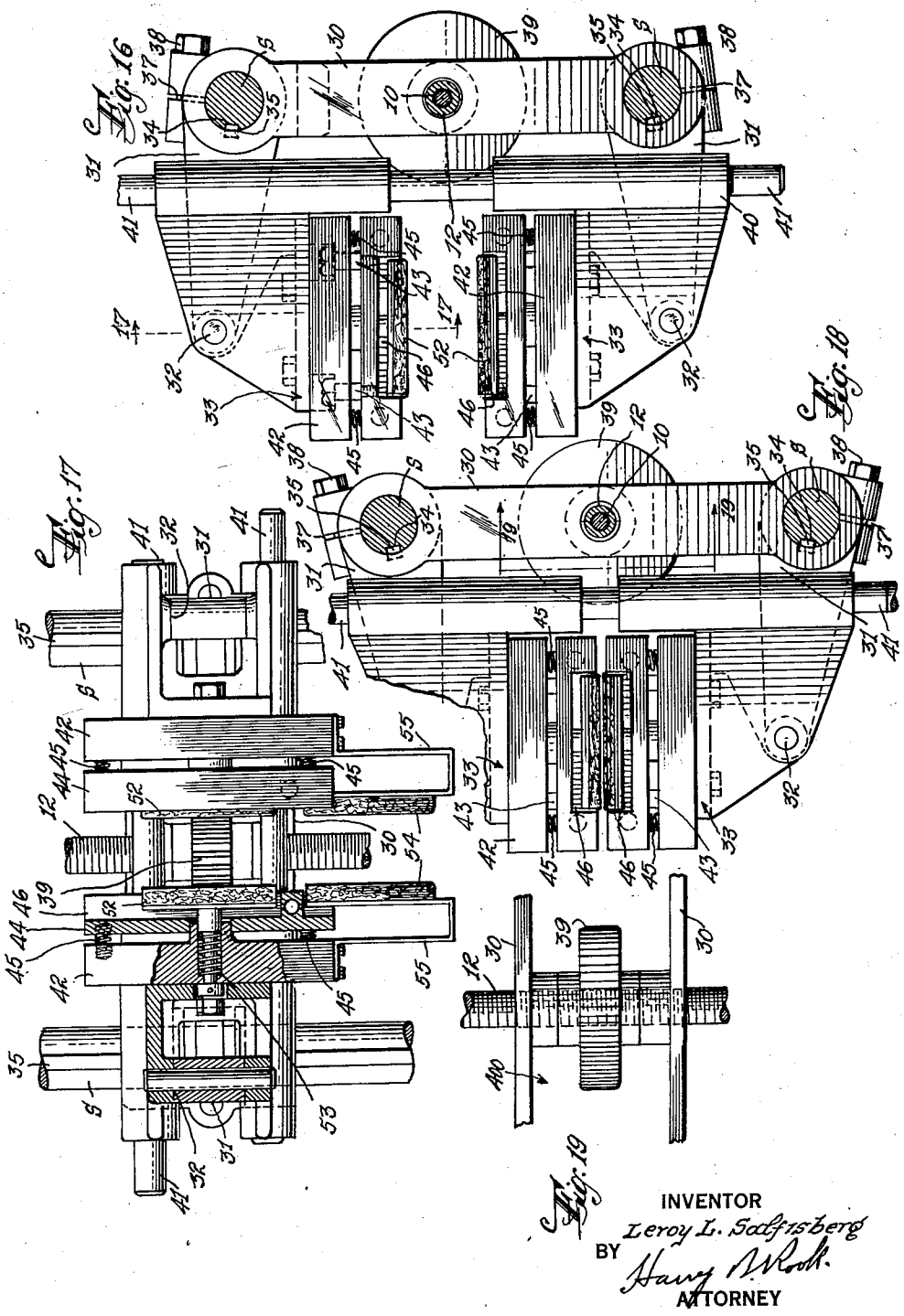


Fig. 16

Fig. 17

Fig. 18

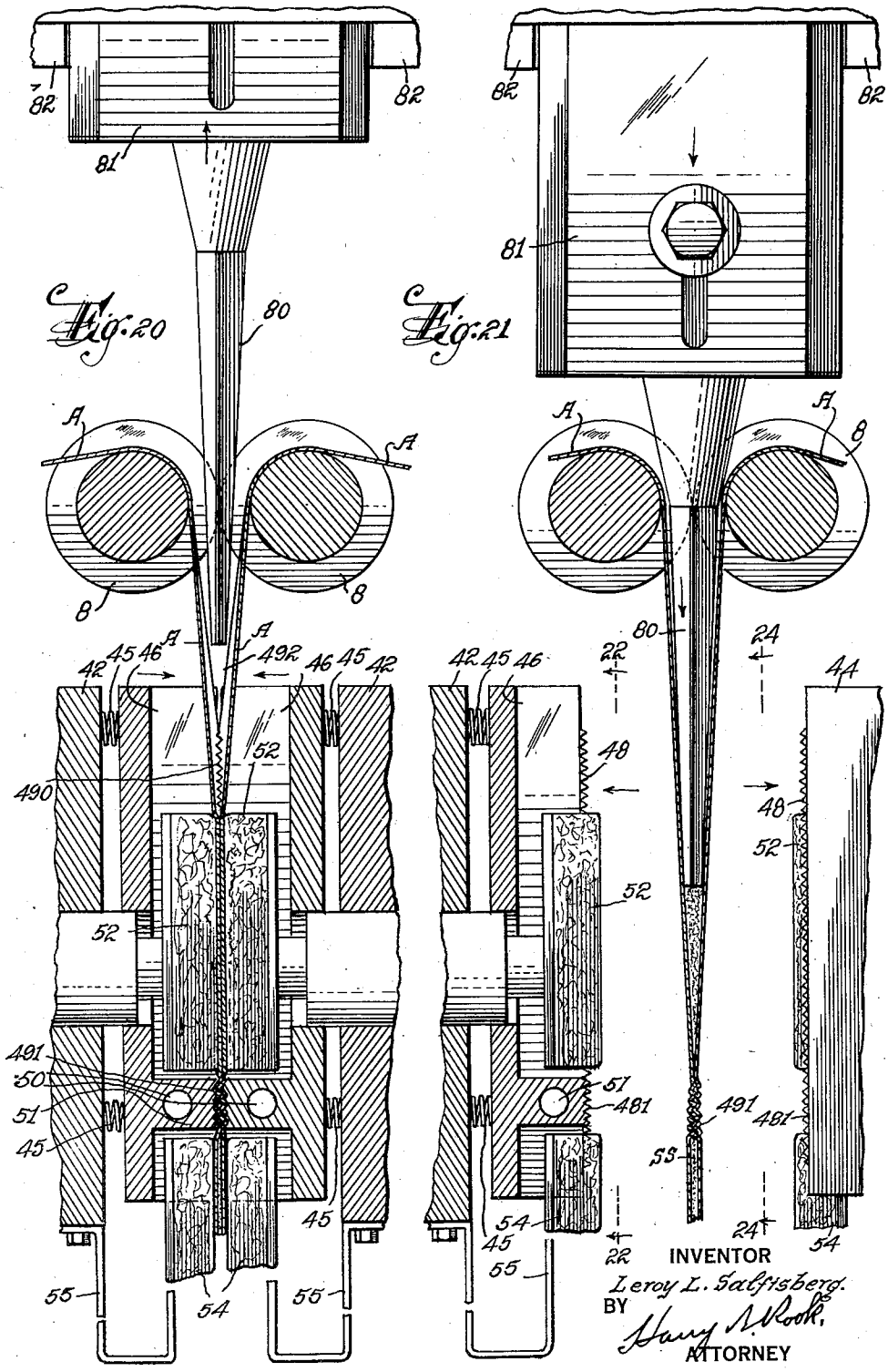
Fig. 19

INVENTOR
Leroy L. Salfisberg
BY Harry N. Rook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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INVENTOR
Leroy L. Salfisberg.
BY
Harry N. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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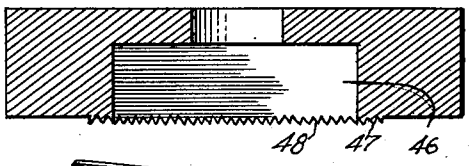


Fig. 23

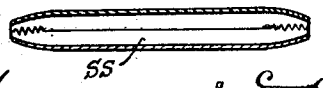


Fig. 25

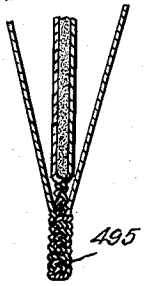


Fig. 37

Fig. 26

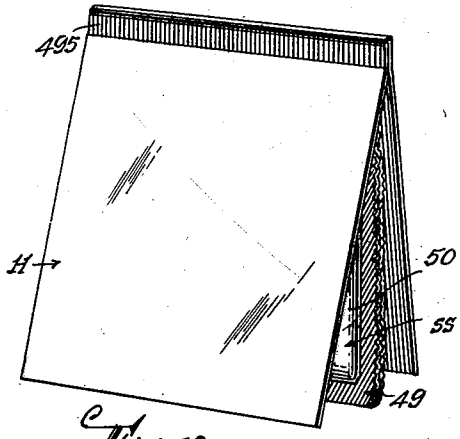
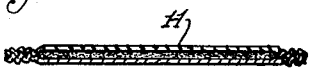


Fig. 38



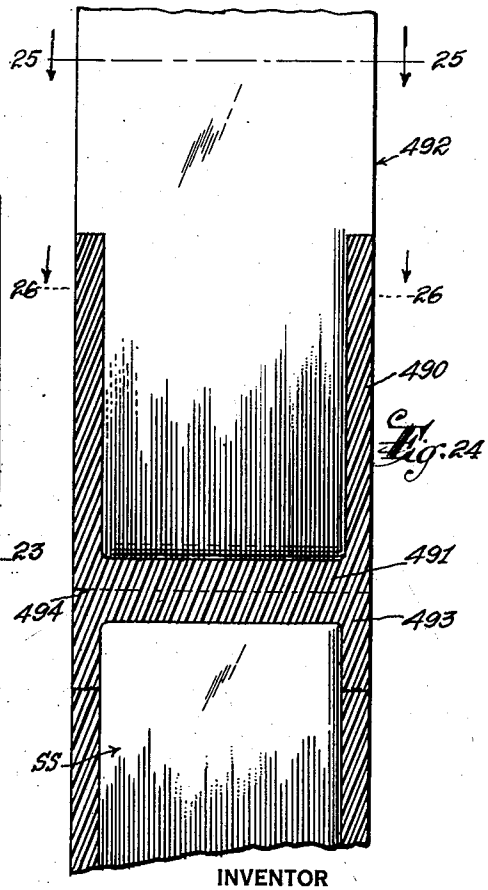


Fig. 24

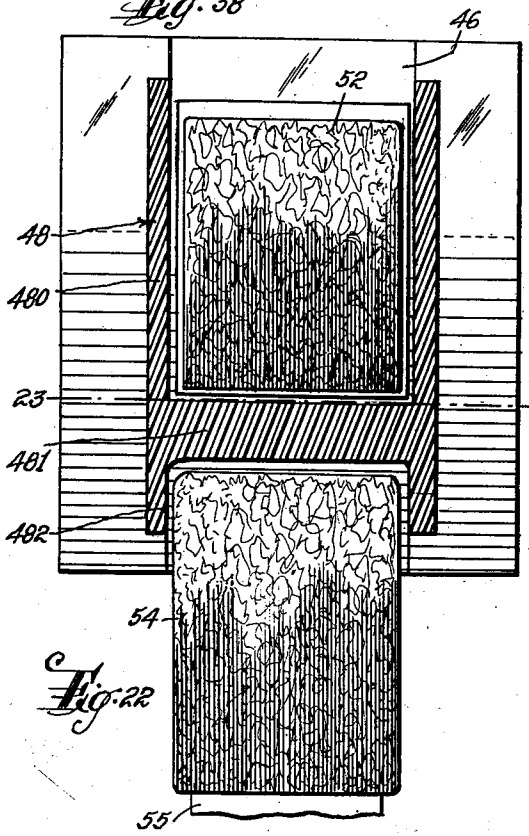


Fig. 22

INVENTOR
Leroy L. Salfisberg.
BY
Harry V. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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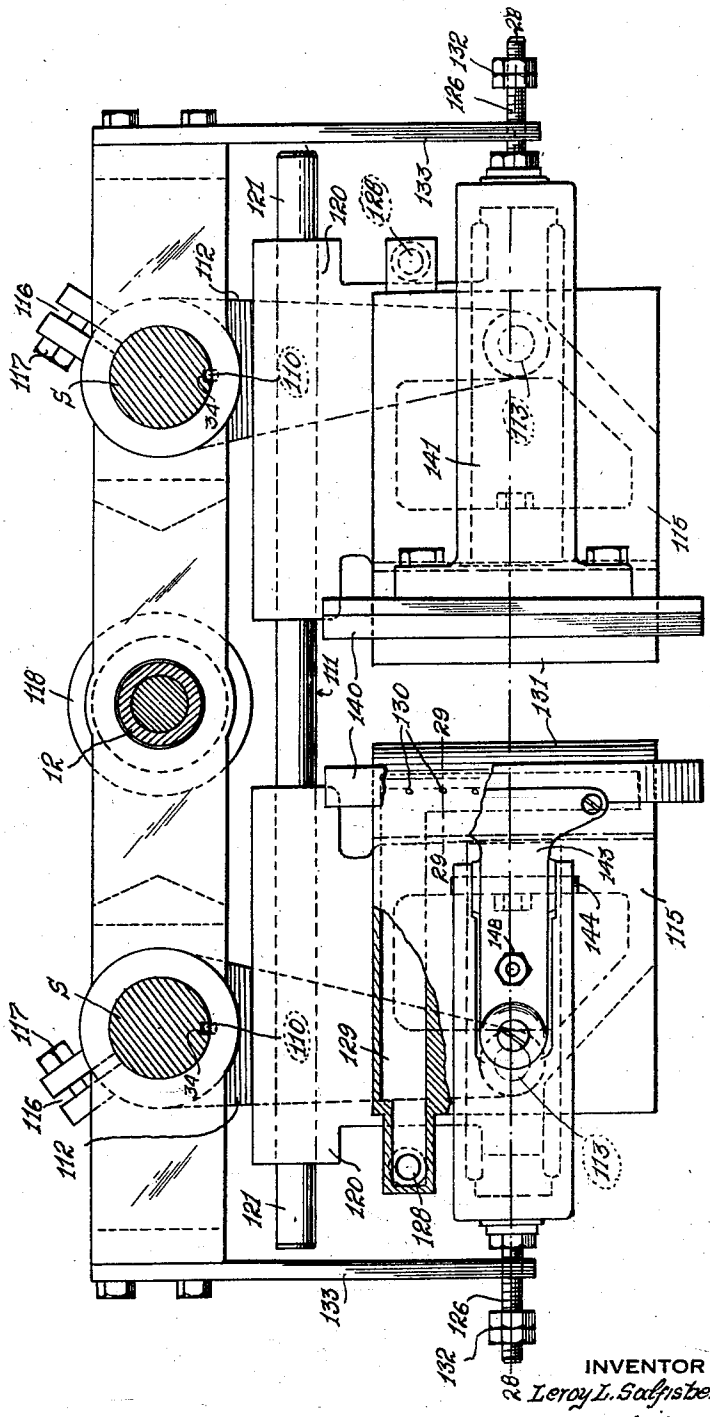


Fig. 27

INVENTOR
Leroy L. Salfisberg.

BY
Harry N. Cook,
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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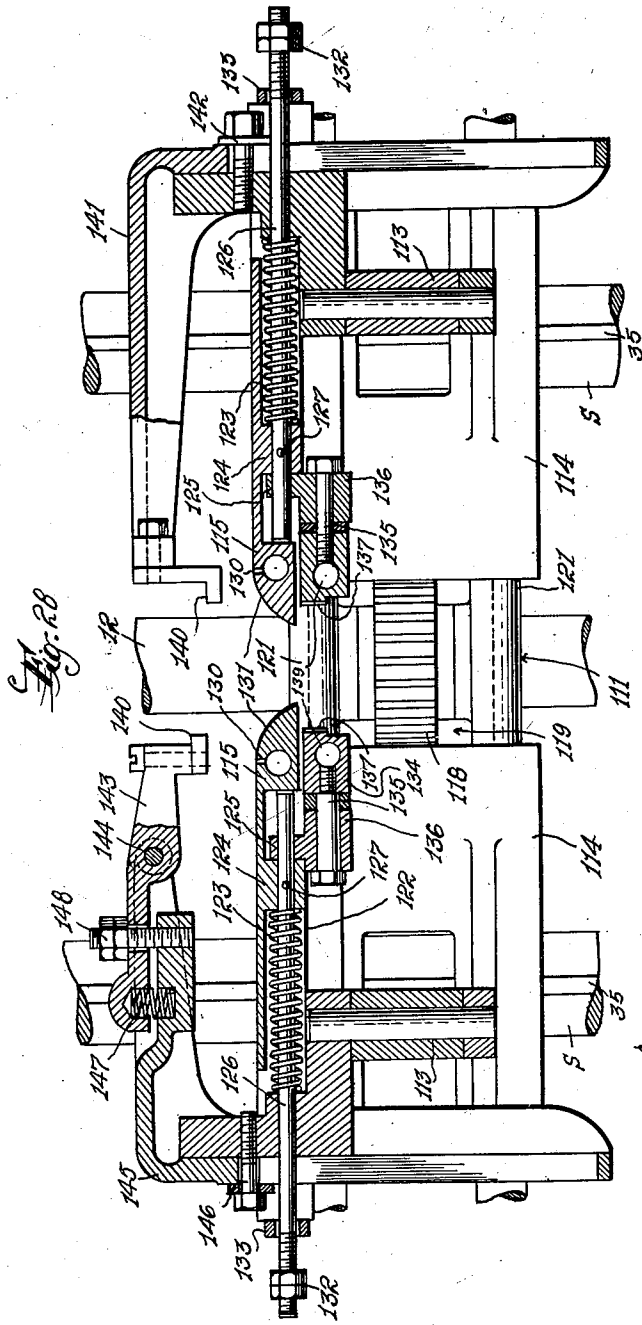


Fig. 28

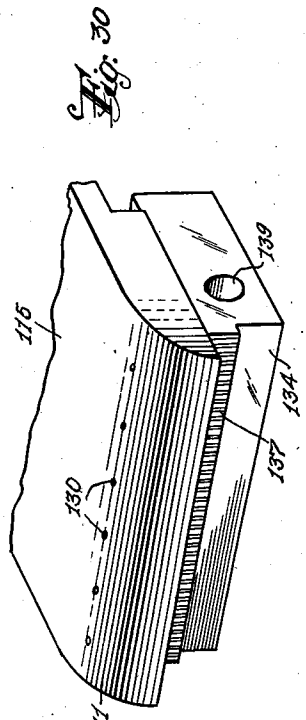


Fig. 30

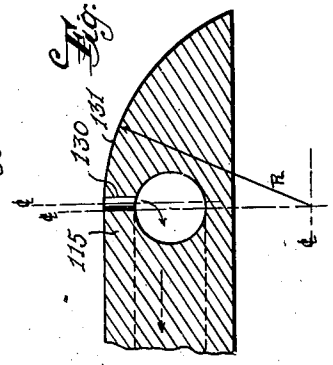


Fig. 29

INVENTOR
Leroy L. Salfisberg.
BY
Harry N. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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Fig. 31

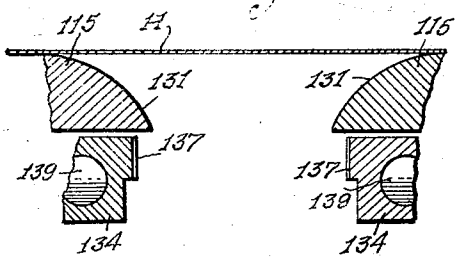


Fig. 32

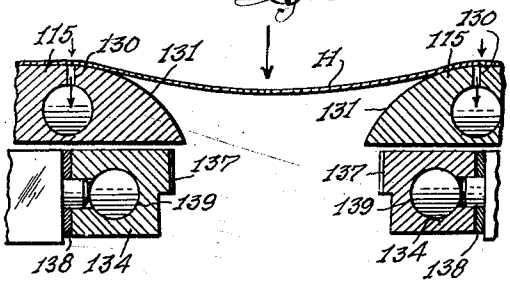


Fig. 33

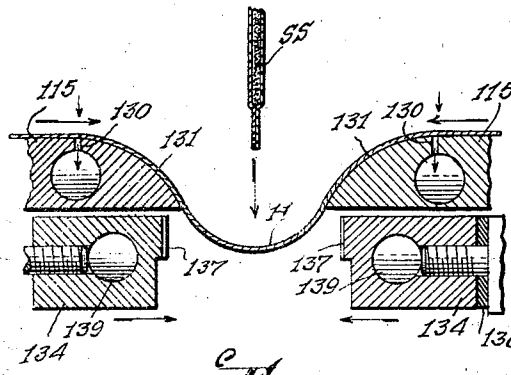


Fig. 34

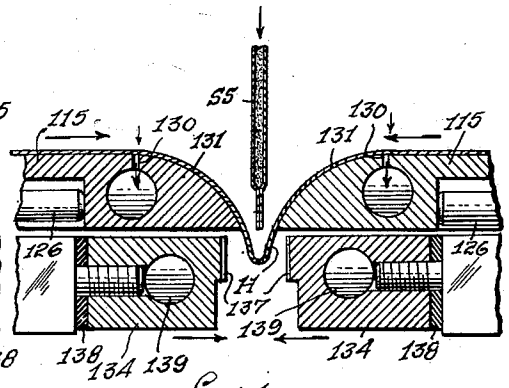


Fig. 35

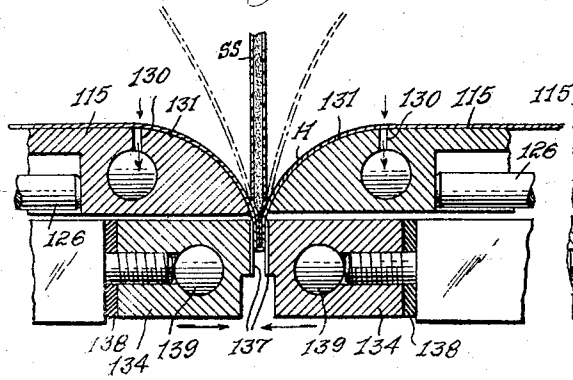
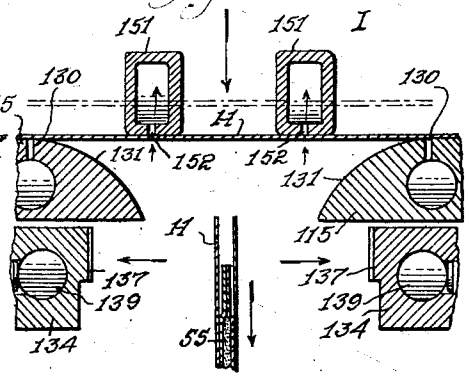


Fig. 36



INVENTOR
Leroy L. Salfisberg.
BY
Harry B. Rook
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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Fig. 39

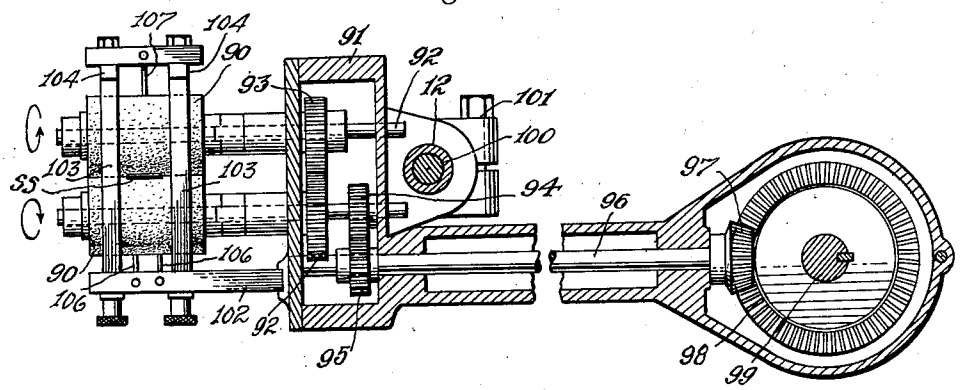


Fig. 40

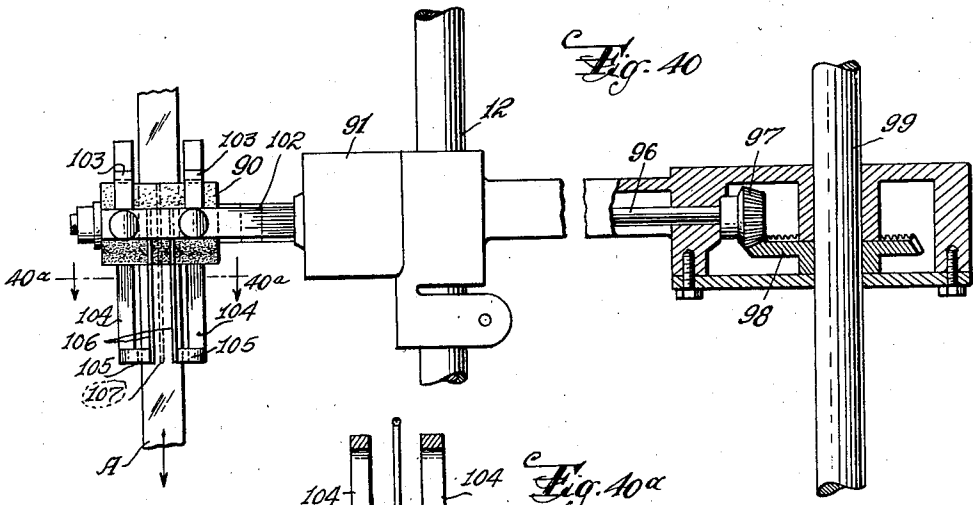
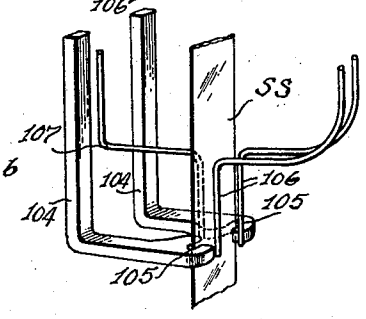


Fig. 40a

Fig. 40b



INVENTOR
Leroy L. Salfisberg.
BY
Harry B. Kook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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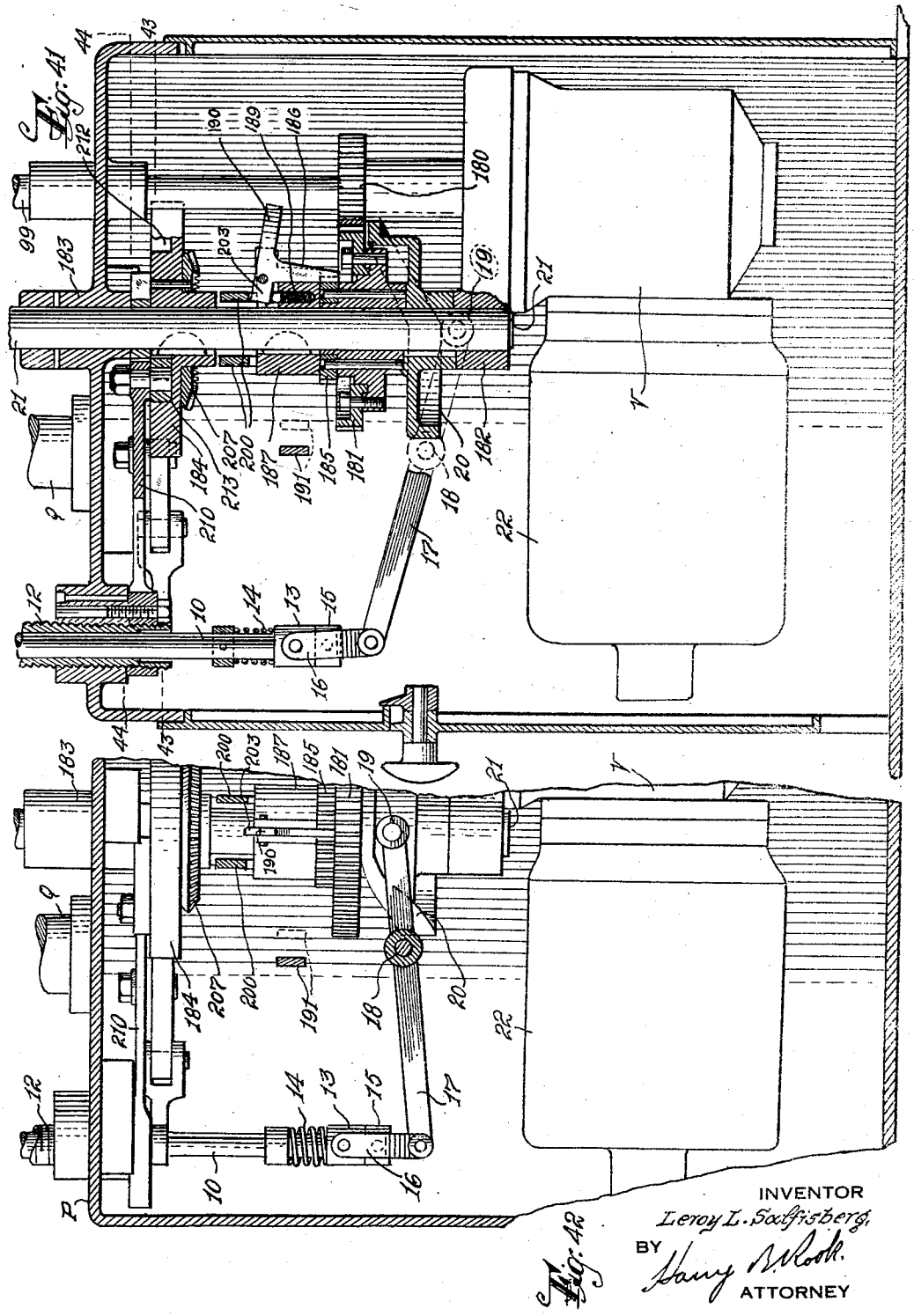


Fig. 41

Fig. 42

INVENTOR
Leroy L. Salfisberg.
BY Harry N. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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Fig. 43

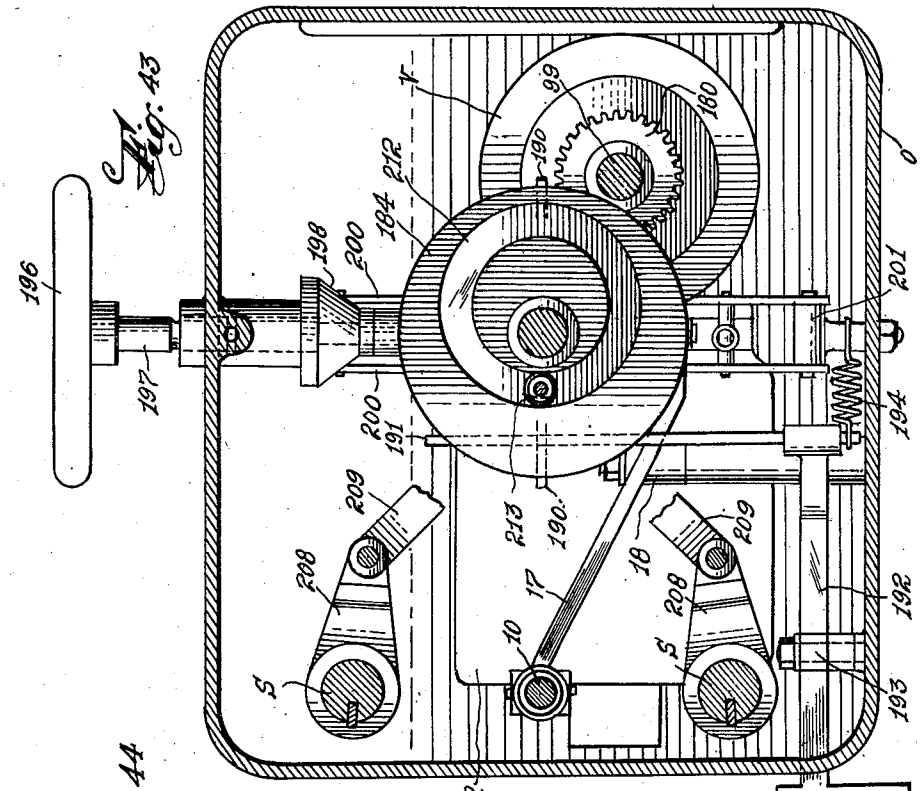
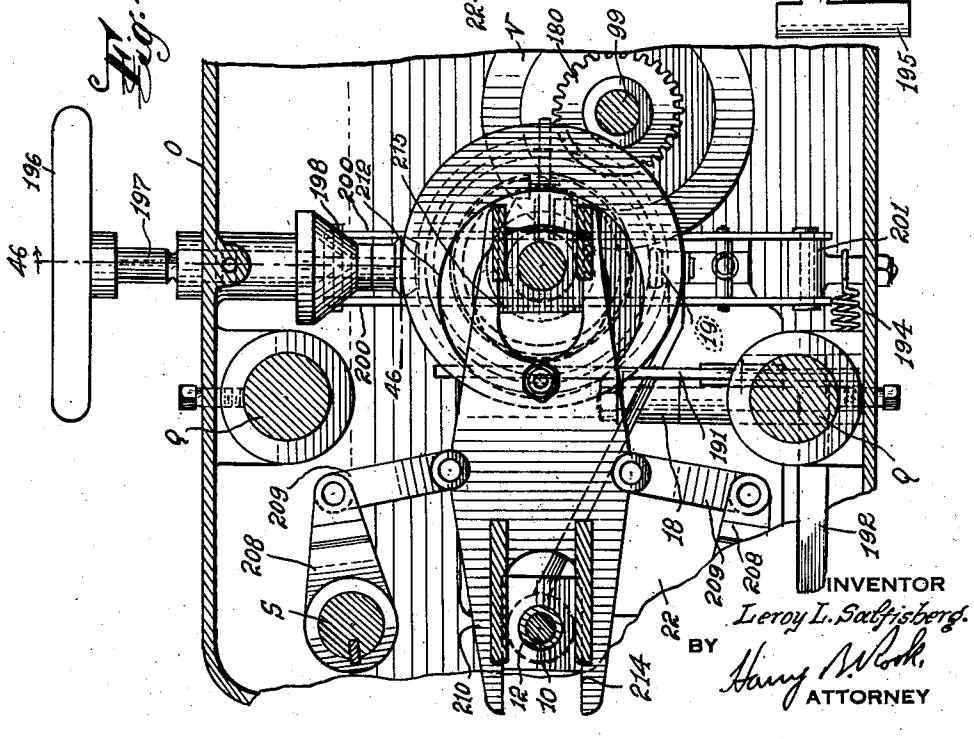


Fig. 44



INVENTOR
Leroy L. Salfisberg.
BY
Harry N. Cook.
ATTORNEY

June 17, 1941. L. L. SALFISBERG 2,245,827

PACKAGE FORMING AND FILLING MACHINE

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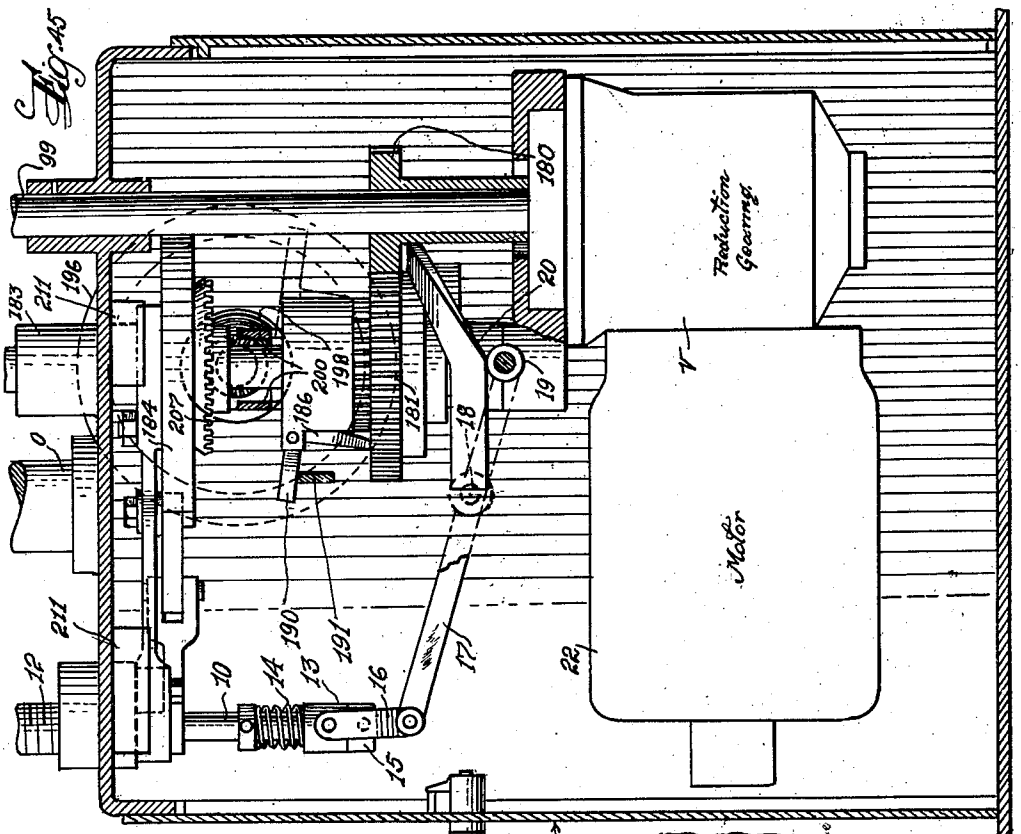


Fig. 45

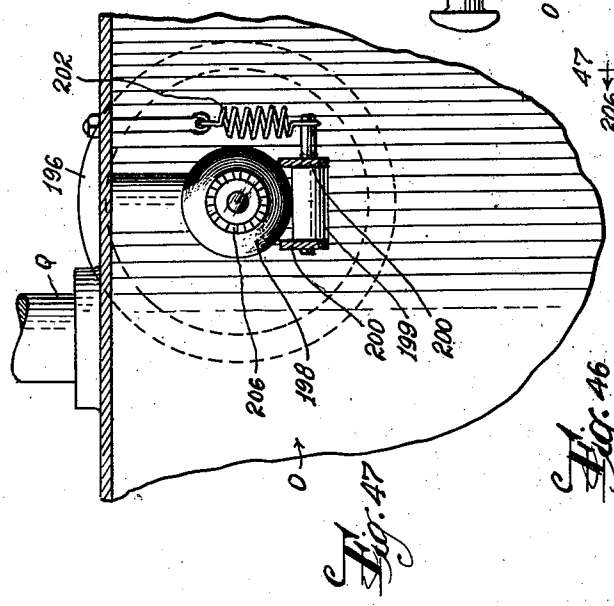


Fig. 47

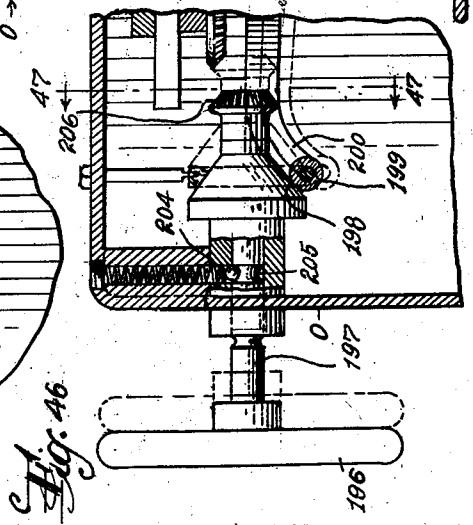


Fig. 46

INVENTOR
Leroy L. Salfisberg.
BY
Harry R. Kooth.
ATTORNEY

Patented June 17, 1941 2,245,827

UNITED STATES PATENT OFFICE

2,245,827

PACKAGE FORMING AND FILLING MACHINE

Leroy L. Salfisberg, South Orange, N. J., assignor to Ivers-Lee Company, Newark, N. J., a corporation of Delaware

Application August 17, 1939, Serial No. 290,604

29 Claims. (Cl. 93—3)

This invention relates in general to the simultaneous forming and filling of packages, and more particularly relates to the packaging or wrapping of substances capable of flowing, such as powder, granular material or small pieces of material. However, the invention is adapted for use in the packaging of any articles of suitable size, either singly or in bulk.

The invention contemplates the packaging or wrapping of the substances or articles in thin sheet material, for example, paper, Cellophane, "Pliofilm," metallic foil, and especially sheet material which itself is thermoplastic and can be softened by heat or has a thermoplastic or fusible coating so that juxtaposed layers of the material can be fused or caused to adhere together by application of heat and pressure to form a seal.

One object of the invention is to provide a machine of the general character described which shall embody novel and improved features of construction whereby a package may be first partially formed by the sealing of two layers of material together, after which successively the partially formed package may be filled, closed, and have a cover or label applied thereto, in a continuous operation.

Another object is to provide such a machine wherein a plurality of packages may be formed, filled, sealed in a continuous chain, and in successive steps severed from each other and labeled.

A further object of the invention is to provide in such a machine a novel and improved method and means for feeding the packaging material whereby a strip of material may be fed step by step with each step supplying an amount sufficient to form a single package.

A still further object is to provide in such a machine novel and improved means cooperating with said strip feeding means in supplying the strip of packaging material, and to seal the layers of the strips together to form the packages.

Another object is to provide novel and improved means cooperating with said strip feeding means and said sealing means for depositing in the partially completed packages the substances or articles to be packaged.

Further objects are to provide novel and improved means for folding labels or covers about the packages and securing the labels to the packages; and to provide novel and improved means for feeding labels to said label folding and sealing means.

Other objects are to provide a machine which shall include a novel and improved method and combination and arrangement of the various strip feeding, package sealing, and label applying means, whereby packages can be automatically, quickly and relatively inexpensively formed, filled and labeled, and to obtain other advantages and results as will be brought out by the following description when read in conjunction with the accompanying drawings in which—

Figure 1 is a front perspective view of a machine embodying my invention.

Figure 2 is a rear perspective view of the machine.

Figure 3 is a fragmentary front perspective view of the upper portion of the machine on a somewhat larger scale and viewing it from the side opposite that from which Figure 1 is viewed.

Figure 4 is a fragmentary front perspective view of the lower portion of the machine.

Figure 5 is a rear perspective view of the upper portion of the machine, viewing the machine from the side opposite to that from which Figure 2 is viewed.

Figure 6 is a fragmentary front elevational view of the package strip feeding mechanism.

Figure 6a is a schematic front elevational view of the package strip feeding mechanism showing the parts in a different relation to that shown in Figure 6.

Figure 7 is a horizontal sectional view on the line 7—7 of Figure 6, viewing the feeding mechanism in a top plan view.

Figure 8 is a vertical sectional view on the line 8—8 of Figure 7.

Figure 9 is a vertical sectional view on the line 9—9 of Figure 7 with portions broken away.

Figure 10 is an enlarged fragmentary vertical sectional view through the filling mechanism.

Figure 11 is a top plan view of the filling mechanism with portions broken away.

Figure 12 is a horizontal sectional view on the line 12—12 of Figure 10.

Figure 13 is a fragmentary transverse vertical sectional view on the line 13—13 of Figure 12.

Figure 14 is a similar view on the line 14—14 of Figure 12.

Figure 15 is a vertical sectional view on the line 15—15 of Figure 14.

Figure 16 is a top plan view of the package sealing mechanism taken approximately on the line 16—16 of Figure 3, and showing the sealing jaws open.

Figure 17 is a front elevational view of the

sealing mechanism with portions broken away and shown in section.

Figure 18 is a view similar to Figure 16 showing the sealing jaws closed.

Figure 19 is a vertical sectional view on the line 19—19 of Figure 18.

Figure 20 is an enlarged fragmentary transverse vertical sectional view through the sealing jaws and illustrating the depositing spout of the filling mechanism in front elevation, showing the first sealing operation on the package.

Figure 21 is a similar view showing the manner of filling the partially completed package.

Figure 22 is a face elevation of one of the sealing jaws viewed from the line 22—22 of Figure 21.

Figure 23 is a horizontal sectional view on the line 23—23 of Figure 22.

Figure 24 is a side elevational view of the partially completed package viewed from the line 24—24 of Figure 20.

Figure 25 is a horizontal sectional view on the line 25—25 of Figure 24.

Figure 26 is a horizontal sectional view on the line 26—26 of Figure 24.

Figure 27 is a top plan view of the label folding and applying mechanism viewed approximately from the line 27—27 of Figure 4.

Figure 28 is a vertical longitudinal sectional view on the line 28—28 of Figure 27.

Figure 29 is an enlarged fragmentary vertical sectional view on the line 29—29 of Figure 27.

Figure 30 is a fragmentary perspective view of one of the folding members.

Figures 31 to 35 inclusive are fragmentary vertical sectional views through the label folding and applying members showing the successive steps of folding and applying the label.

Figure 36 is a similar view showing the manner of depositing a label on the folding and applying members.

Figure 37 is a fragmentary transverse sectional view through one edge of a completed and labeled package.

Figure 38 is a perspective view of the completed package.

Figure 39 is a horizontal sectional view of the auxiliary feeding mechanism for the filled packages viewed approximately on the line 39—39 of Figure 3.

Figure 40 is a side elevation of the mechanism shown in Figure 39 with portions broken away.

Figure 40*a* is a horizontal sectional view on the line 40*a*—40*a* of Figure 40.

Figure 40*b* is a fragmentary perspective view of portions of the strip guides.

Figure 41 is a fragmentary vertical sectional view through the lower part of the machine and showing the driving mechanism.

Figure 42 is a similar view partially in side elevation and with the parts shown in different relationship.

Figure 43 is a horizontal sectional view on the line 43—43 of Figure 41.

Figure 44 is a similar view on the line 44—44 of Figure 41.

Figure 45 is a view similar to Figure 42 showing the parts in different positions from those shown in Figure 42.

Figure 46 is a transverse vertical sectional view on the line 46—46 of Figure 44, and

Figure 47 is a vertical sectional view on the line 47—47 of Figure 46.

Describing my method and machine in their broader aspects, two strips of suitable packaging material A are drawn step by step from supply rolls B into juxtaposed or side by side relation by a feeding mechanism C.

At each step of movement the two strips A are sealed together by sealing mechanism D along their longitudinal edges and transversely to form a bag-like receptacle having its mouth facing upwardly between the strip. Immediately thereafter the substance or articles to be packaged is deposited by a filling mechanism E into the mouth of the partially formed package, whereupon the two strips with the partially formed package are fed downwardly and the mouth of the package is sealed by the mechanism D simultaneously with the partial formation of the next succeeding package as before described.

The package strip, that is the chain of packages so formed is pulled downwardly by an auxiliary feeding mechanism F to a severing mechanism G which successively separates the packages from each other or from the strip.

Prior to the severance of each package K from the strip, a label H is placed by a carrier I upon a label applying mechanism J. This mechanism J folds the label H intermediate its length about the lower edge of the package and secures the folded portion of the label to the package.

Thereafter, the labeled package (see Figure 38) is dropped by gravity upon a chute L which directs the packages successively to the upper reach of an endless conveyor belt M which passes over a table N from which the packages may be removed as desired or placed in cartons.

More specifically describing the invention, the machine includes a base O which is hollow and in which the power unit and control are mounted, the base having a top wall P in which are mounted spaced vertical posts or standards Q. Upon the standards Q is mounted a top piece R which carries the packaging strip feeding mechanism C and the filling mechanism E.

The top piece R has laterally projecting arms 1 on which are journaled the supply rolls A for the packaging material strips which supply the strips A to the feeding mechanism C. This feeding mechanism includes a frame 2 which is secured to the front edge of the top piece R and includes side pieces 3 bolted to the top piece and a cross bar 4 which is a part of the top piece R. On the side pieces 3 are journaled idler rollers 6 over which the respective strips A pass from the supply rollers B, and on the cross bar 4 are journaled other idler rollers 7, one between each roller 6 and a pair of guide rollers 8.

A yoke 9 which is mounted on a vertically reciprocable shaft 10, has a strip pulling roller 11 disposed between the idler rollers 6 and 7 at each side of the frame 2. Each strip A of packaging material is led from the corresponding supply roll under the corresponding idler roller 6 over the corresponding pulling roller 11, under the corresponding idler roller 7 and downwardly over the guide roller 8, the two strips being thus brought into juxtaposition or opposed side by side relation to each other.

The shaft 10 is reciprocable in a tubular standard 12 that is secured in the top P of the base of the machine, (see Figures 5 and 42). The shaft 10 extends downwardly through the top P of the base and carries a sleeve 13 slidable on the shaft and disposed between a compression spring 14 and a fixed collar 15. The sleeve 13 is pivotally connected to one end of a pair of links 16 the other end of which is pivotally connected to one end of a lever 17 that is journaled at 18 between its ends on a horizontal

axis in the base of the machine and has a follower roller 19 on its other end that follows a cam 20 carried by a counterdrive shaft 21 that is driven, through gearing hereinafter to be described, from an electric motor 22 mounted in the base of the machine.

In operation of the machine so far described, periodically the packaging material strips A are held against movement by the sealing means D as hereinafter described, and while the yoke 9 is at the lower limit of its stroke, as shown in Figure 6. While the strips are so held, the lever 17 elevates the yoke 9 so as to exert pulls on the strips A and unwind predetermined quantities of the strips from the respective supply rolls B. Suitable brakes or drags AA and BB are provided for preventing overrunning of the strips from the rolls B and idler rollers 6, respectively. These quantities of strips are pulled downwardly, by means hereinafter described, prior to the formation of each package, and at the same time the yoke 9 is lowered by the lever 17, as shown by solid lines in Figure 6 and dot and dash lines in Figure 6a. The strips A are therefore fed step by step, each step withdrawing from the rolls a quantity of the packaging material sufficient to form one package.

To firmly guide the yoke, the inner end thereof is bifurcated at 23 and embraces a vertical guide 24 secured on the top piece of the machine. To limit downward movement of the yoke, I provide an adjustable stop nut 25 that is screw-threaded on a set screw 26 rotatably but longitudinally immovably mounted in the top piece of the machine, the nut being held against rotation by engagement with the guide 24. By adjusting the nut 25 to vary the extent of downward movement of the yoke, the length of the stroke of the yoke 9, and consequently the amount of material fed on each step, may be varied.

From the feeding mechanism C the strips are led downwardly to the sealing mechanism D. This mechanism includes an auxiliary frame 30 that is adjustably mounted for vertical movement on a pair of vertical shafts S that have their ends rotatably mounted respectively in the top P of the base and the top piece R. Within the auxiliary frame 30 and secured upon and to rotate with each of the shafts S is a crank arm 31 which is pivotally connected at 32 to a sealing jaw 33. The shafts S have longitudinal keyways 34 and each crank arm 31 has a key 35 in the corresponding keyway. The end of each crank arm 31 that is connected to the shaft S is also split at 37 and clamped on the corresponding shaft S by a bolt 38, whereby the crank arms support the auxiliary frame 30 on the shafts. For adjusting the auxiliary frame 30 vertically on the shafts S, an adjusting nut 39 is disposed in a slot 40 in the frame and is screw threaded on the standard 12, so that when the clamps 37, 38 are loosened, rotation of the nut 39 in one direction or the other will raise or lower the auxiliary frame.

The two sealing jaws 33 are mounted to reciprocate toward and from each other in a horizontal plane and are guided in accurate alignment with each other during their movements by guide sleeves 40 which are slidable over guide rods 41. The two jaws 33 are substantially identical in construction and each includes a body portion 42 on which is mounted, as by bolts 43, a crimping and sealing block 44, whereby the sealing block may have movement relative to the body portion 42, there being springs 45 to yieldingly resist movement of the sealing block toward the body portion.

Each sealing block has a recess 46 in its face which is surrounded on three sides by a rim 47 having suitable corrugations or serrations 48. Where the package is to be approximately rectangular in shape, as shown, the corrugations 48 are arranged on the rim of the sealing block in a manner corresponding to three sides of the rectangular package, as clearly shown in Figures 22 and 23.

In the present instance, the package is rectangular in shape as shown in Figures 22 to 26 inclusive, 37 and 38, the package having the packaging material crimped and sealed along the four edges of the package as at 49 to provide a compartment 50 within the sealed edges and between the two strips of packaging material to receive the substance being packaged. For such a package, each sealing block has two vertically disposed parallel series of corrugations 480 to grip the longitudinal edges of the packaging strips A, and a horizontal series of corrugations 481 to grip the packaging material strips transversely. The length of the series 480 is somewhat greater than the length of the corresponding sides of the package to be formed, and below the transverse series 481 is a pair of short series of corrugations 482 to supplement the series 480 and ensure complete sealing of the package at the juncture of the transverse series 481 and said vertical series 480. The transverse series 481 is of a width corresponding to the width of the bottom edge of one package and the top edge of the next preceding package, as shown in Figures 22 and 24.

In forming the packages, the sealing blocks 44 are first separated as shown in Figure 20 and the packaging strips A are pulled downwardly into juxtaposition between the sealing blocks. Thereupon, the sealing blocks are moved toward each other by oscillation of the shafts S so as to cause the corrugations 48 and 481 to press the strips A together and partially form a package to produce a bag-like structure having its upper end open between the strips at the upper ends of the sealing blocks. In other words, the two strips A are sealed together along their longitudinal margins, as at 490 and transversely as at 491, to form the bag which is open at its top as at 492, as shown in Figures 20 and 24.

Where the strips A are of thermoplastic material or have a thermoplastic coating on their adjacent sides, the sealing blocks 44 will have suitable electric heaters 51 (well known in the art) for heating the blocks to soften or fuse the thermoplastic material and seal the strips together. Where the edges of the strips are provided with adhesive, the heaters may be omitted.

While the strips A are clamped between the sealing blocks, the feeding rollers 11 are raised to pull quantities of the strips A from the rolls B for the next package. During this operation, it is desirable to prevent stretching or tearing of the strips, especially when the strips are formed of thermoplastic material which is softened by the heat in the sealing jaws. This is accomplished by a soft pad 52 yieldingly mounted in the recess 46 of each sealing block as by a spring influenced guide rod 53 (see Figure 17), said pads being brought into yielding pressing contact with

opposite sides of the strips as shown in Figure 21 so as to clamp the strips between the pads.

Thereupon the sealing blocks are separated by oscillation of the crank arms 31 and shafts S, and during the first portion of this movement the spring pressed pads 52 hold the strips between them so as to ensure that the strips are pulled clear of or stripped from the corrugations of the sealing blocks. While the sealing jaws are being so separated the spout 80 of the filling mechanism E (hereinafter described) is quickly lowered into the open end of the partially completed package to deposit the material to be packaged as shown in Figure 20. Then the strips with the partially completed package are pulled downwardly by the auxiliary feeding mechanism F simultaneously with descent of the feeding rollers 11 preparatory to the formation of the next package; and simultaneously the spout 80 of the filling mechanism is raised as shown in Figure 21.

Thereupon another package will be partially completed as above described, and as the sealing blocks are brought together for this purpose, the open end of the first formed package will be closed and sealed at 493 by the transverse corrugations 481 and supplemental longitudinal corrugations 482 as shown in Figure 21 and Figure 24.

Preferably soft pads 54, yieldingly mounted as by spring strips 55 on the body portions 42 of the sealing jaws, will press the package to exclude excess air therefrom, just prior to sealing of the open end of the package by the corrugations 481, as shown in Figure 21.

The filling mechanism E includes a hopper 56 suspended at its upper end as at 57 on a vertical rod 58 that is secured in the top pieces of the machine. The bottom of the hopper is formed by a rotatably measuring plate 59 which is rigidly connected to a ratchet 60 with which cooperates a pawl 61 that is pivotally mounted at 62 on one end of an actuating lever 63 which is pivotally mounted at 64 on the top piece of the machine and has a roller 65 at its other end to follow a cam 66 mounted on a vertical shaft 24 journaled in the top piece and the top P of the base of the machine and driven from the motor 22 (see Figure 41). The pawl 61 is normally influenced into engagement with the ratchet 60 by a link 68 pivotally connected to the lever 63 at 69 and carrying a spring influenced pin 70 slidably mounted on the link and pivotally connected at 71 at one end to an arm 72 on the pawl 61 adjacent its pivot 62 with the lever. This connection is such that when the parts are in the position shown in Figure 11, the spring influenced pin will hold the pawl in engagement with the ratchet, while if the pawl is manually swung about its pivot 62 out of engagement with the ratchet, the link 68, spring influenced pin 70 and arm 72 will be swung in such relation to the pivot 62 as to hold the pawl out of engagement with the ratchet.

The measuring plate 59 has an upstanding perimetral flange 73 which forms a receptacle for the material from the hopper which passes on to the measuring plate through an outlet opening 74 in the lower portion of the hopper (see Figure 10). The measuring plate has a circumferential row of holes 75 which are closed at the bottom of the plate by a disc 76 which has at the front of the machine an opening 77 to which one section 78 of a depositing spout is connected. As the measuring plate is rotated step by step by the pawl and ratchet 61, 62, the outlet openings 75 are successively brought into register with the spout section 78 which permits a quantity of the substance to fall by gravity into the spout. For insuring equal amounts of the substance being discharged each time, a scraper plate 79 is secured to the hopper 56, and extends across the top of the measuring plate between the hopper and the perimetral flange 73 so as to hold back the substance on the top of the plate and level off the substance in the holes 75 as the latter approach the depositing spout, as shown in Figures 12 and 15.

A second section 80 of the depositing spout is telescopically associated with the section 78 and vertically reciprocated to conduct the substance into the partially completed package as shown in Figure 20. This spout section 80 is fixedly mounted on a slide 81 that is vertically reciprocable in a guide 82 mounted on the top piece of the machine. A pivot rod 83 is connected to the slide 81 and has its ends pivotally connected by links 84 to the arms of a bifurcated lever 85 that is pivotally mounted at 86 on the top piece of the machine to swing vertically (see Figure 11). The end of the lever opposite the slide 81 has a roller 87 which follows a cam 88 mounted on the countershaft 21. Preferably the slide carries a ram 89 to force the substance out of the opening 75 in the measuring plate into the depositing spout, as shown by dot and dash lines in Figure 10.

With this construction, the measuring plate 59 and the movable section 80 of the depositing spout move in timed relation to the movement of the feeding mechanism C and the sealing jaws D to deposit the substance to be packaged in the partially formed packages.

It will be noted that the packages will be formed in a continuous chain so as to form a package strip SS including a plurality of integrally connected packages. The package strip containing this chain of packages is pulled downwardly from the sealing mechanism D by the auxiliary feeding mechanism F (see Figures 39 and 40). This mechanism is shown as including a pair of rotatable cylindrical brushes 90 which receive the package strip between them, the bristles yieldingly and frictionally exerting pressure on opposite sides of the strip so that as the brushes are rotated in the direction indicated by the arrows, the package strip will be placed under tension and pulled downwardly. The bristles compensate for the irregularities in thickness in the package strip due to the substance containing compartments, and the bristles will yield and slide over the strip in case excessive resistance to pull of the brushes on the strip occurs, so as to insure against tearing of the strip.

The rollers are mounted in an auxiliary frame 91 on shafts 92 which are geared together by pinions 93. One of the shafts has a second pinion 94 which meshes with a gear 95 on a countershaft 96 and also has a beveled pinion 97 meshing with a beveled gear 98 that is keyed on a jack shaft 99 journaled in the top piece of the machine and the top of the base P and driven from the motor 22 (see Figure 45), whereby the rollers are continuously driven during operation of the machine.

The auxiliary frame 91 is slidably and vertically adjustably mounted at 100 on the tubular shaft 12, and for holding the frame in adjusted positions, the frame has a split clamp 101.

Suitable guide mechanism (see Figures 3, 4, 39 and 40), may be utilized for guiding the package strip in a straight path and for preventing the package strip from being wound around the brushes. This mechanism includes a bracket 102 on the auxiliary frame 91, on which are mounted bars 103 extending transversely of the rollers and depending from which are a pair of guide arms 104 having fingers 105 disposed beneath the brushes and formed with complemental notches between which the package strip SS is threaded. Three guide wires are mounted on the bracket 102, two of which 106 extend partially around one roller and along one side of the package strip, while the other wire 107 extends partially around the other roller and along the other side of the package strip. These guide fingers 105 and guide wires accurately guide the package strip to the severing mechanism G.

The package strip passes through the severing mechanism G but the individual packages are not severed from the strip until after a label or cover has been applied to each package by the label applying mechanism J. This mechanism includes an auxiliary frame 111 that is slidably vertically adjustably mounted on the vertical shafts S. Within the auxiliary frame 111 and secured upon and to rotate with each of the shafts S is a crank arm 112 which is pivotally connected at 113 to a block 114. Each crank arm 112 has a key 110 slidable in the keyway 34 of the corresponding shaft S, and the end of each crank arm 112 that is connected to the shaft S is also split at 116 and clamped on the corresponding shaft S by a bolt 117, whereby the crank arms support the auxiliary frame 111 on the shafts. The auxiliary frame may be adjusted vertically on the shafts S by an adjusting nut 118 that is disposed in a slot 119 in the auxiliary frame and is screw-threaded on the standard 12, so that when the clamps 116 are loosened, rotation of the nut 118 in one direction or the other will raise or lower the auxiliary frame.

The two blocks 114 are slidably mounted on the auxiliary frame 111 to reciprocate toward and from each other in a horizontal plane and are guided in accurate alignment with each other during their movements by guide sleeves 120 which are slidable over guide rods 121. Upon each of the blocks 114 is slidably mounted a folding plate 115, these folding plates normally being separated from each other as shown in Figures 27 and 28 so as to receive the package strip SS between them. The folding plates are substantially identical in construction, each being slidably mounted on a guide bed 122 on one of the blocks 114, and each being yieldingly normally influenced toward the other by a compression spring 123, movement of the plates under the influence of which is limited by engagement of the lug 124 on the plate with a stop 125 on the bed 122. The spring is held in position by an adjusting rod 126 which is slidable in the block 114 and is fixedly connected at 127 to the folding plate.

In operation of the label folding mechanism, a label H of suitable material, preferably casein coated paper, is placed by the carrier I on the top surfaces of the folding plates and in bridging relation to the edges of the plates, as shown in Figures 36 and 31. The label is held in contact with the folding plates by suction from a suitable vacuum pumping mechanism T (see Figure 2), which is connected at 128 to a duct 129 in the folding plate which has ports 130 leading upwardly through the face of the plate. The adjacent edges of the two folding plates are curved downwardly as at 131 and the ducts 130 are so related to said curved surfaces 131 (see Figure 29), that when the plates are moved toward each other the label will be buckled or bent downwardly (see Figures 32 to 35 inclusive).

The label H is placed on the folding plates 115 just prior to each step of feeding of the packaging strips A and the package strip SS, and as the package strip SS is pulled downwardly by the auxiliary feeding mechanism F, the lower edge of the strip enters the space between the folding plates 115 above the label as shown in Figure 33. At this time, the folding plates have begun their movement toward each other through oscillation of the crank arms 112 on the shafts S and continue to fold the label as shown in Figure 34. This action continues until the transverse sealed portion 491 of the package at the lower end of the package strip has passed below the folding plates as shown in Figure 35.

To compensate for different thicknesses of packages, movement of the folding plates toward each other may be adjusted by set nuts 132 on the outer ends of the rods 126 which abut stop arms 133 on the auxiliary frame 111 as the folding plates move toward each other.

This adjustment of the folding plates also permits movement of the blocks 114 toward each other after the folding plates have engaged the package, to operate presser blocks 134 for attaching the label to the package. It will be noted that the label is folded intermediate its length around the lower sealed edge of the package, and this sealed edge of the package and the corresponding folded portion of the label extend below the folding plates so as to be received between the presser blocks 134. Each presser block is mounted on supporting rods 135 that are slidable in a boss 136 on the corresponding body block 114 and has a serrated edge 137 to engage the corresponding side of the label. As the body blocks 114 move toward each other, the presser blocks 134 press the label and sealed edge of the package between them as shown in Figure 35, and preferably yielding means such as pads 138, or springs, may be interposed between the presser blocks and the bosses 136 to provide for yielding pressure of the presser blocks on the label and package. Where the packaging material is thermo-plastic or has a thermo-plastic outer coating, or where the label has a fusible coating, the presser blocks will be provided with electrical heaters 139, known in the art, for heating the fusible substances so as to firmly attach the label to the package at 495 (see Figure 38). Where adhesive is used between the folded portion of the label and the package, the heaters may be omitted.

Simultaneously with the attachment of the label to the package, the completed package is severed from the package strip SS by the severing mechanism G. This mechanism includes a pair of knife blades 140 to cooperate with each other with a shearing action, one blade being rigidly mounted on a bracket arm 141 that is adjustably mounted by a bolt and slot connection 142 on one body block 114 of the auxiliary frame 111. The other blade is mounted on one end of a lever 143 that is pivotally mounted at 144 intermediate its ends on a bracket arm 145 which

is secured by the bolt and slot connection 146 to the other body block 114. A compression spring 147 is interposed between the other end of the lever 143 and the bracket arm for yieldingly pressing the blade carried by the lever into shearing contact with the other blade when the two blades are brought together. Set nuts 148 are provided for holding the lever 143 in adjusted position.

As the package is completed by the attachment of the label to the lower end thereof, the upper sealed end 493 of the package is brought between the blades 140, and as the body blocks 114 move toward each other, the blades 140 shear the package strip along the line 494 of Figure 24 so as to separate the package from the package strip.

Thereupon the body blocks 114 are moved apart by the crank arms 112 and the completed package drops by action of gravity onto the chute L by which the package is guided to and deposited upon the endless belt conveyor M.

The label carrier I for placing the labels on the folding plates 115 includes a hollow picker bar 150 which has a plurality of laterally projecting fingers 151 that are provided with openings 152 in their bottom walls (see Figures 4 and 36). The picker bar 150 is journaled between the ends of levers 153 and 154 the other ends of which are pivotally connected at 155 to the frame of the machine. One of these levers, that is, the lever 153, is hollow and has its interior connected by a suitable packed joint 156 to the picker bar. The pivotal connection of the other end of the lever 153 to the machine comprises a packed joint 162 which is connected to a tube or pipe 163, which is in turn connected to the vacuum pump T, whereby suction may be produced through the openings 152 of the fingers 151 of the picker bar. The picker bar also has integral arms 157 at its ends which are pivotally connected at 158 to crank arms 159 carried by a shaft 160 journaled in bearings 161 on the base of the machine.

The shaft 160 is actuated to elevate and lower the picker bar to and from the folding plates by a pinion 165 connected to the shaft and meshing with a gear quadrant 166 that is journaled at 167 on the base of the machine (see Figure 4), and a torque spring 164 is provided to counterbalance some of the weight of the arms 159 and the picker bar. The quadrant carries a pin 168 which is pivotally connected to a block 169 that is slidable in an arm 170 carried by a reciprocating shaft 171 mounted in a guide 172 on the top P of the base of the machine. The reciprocating shaft 171 is pivotally connected at 173 to one arm of a bell crank lever 174 that is pivotally mounted at 175 on the top P of the base and has its other arm provided with a follower roller 176 that follows a cam groove in a cam disc 177 carried by the counterdrive shaft 21.

The label picker bar 150 cooperates with a label supporting table U which supports a stack of labels H. This table may be of any suitable construction and is actuated step by step to elevate the stack of labels as the labels are removed from the top of the stack by the picker bar. Normally the picker bar is in the position shown in Figure 4 with the fingers 151 contacting with the uppermost label of the stack. At the proper time, and through a suitable valve mechanism (which forms no part of this invention), suction is created in the picker bar and fingers so as to cause adherence of the uppermost label to the fingers. Thereupon, in timed relation to the feed of the package strip SS, the cam 177, bell crank 174, reciprocating shaft 171, and pin 168, swing the gear quadrant 166 so as to rotate the pinion 165 and shaft 160. Rotation of this shaft swings the crank arms 159 upwardly and thereby elevates the picker bar with a label attached so that the fingers of the picker bar overlie the folding plates 115 of the label applying mechanism J as shown in Figure 36. Thereupon the suction is cut off from the picker bar and is applied to the duct 129 and ports 130 of the folding plates so as to hold the label in position on the plates. Thereafter the picker bar is returned to its normal position preparatory to the placing of another label for the next successive package.

As hereinbefore stated, the power mechanism for driving the machine includes the electric motor 22 which is mounted in the hollow base B of the machine and is connected through a known type of speed reduction gearing V to the jackshaft 99. This jackshaft carries a pinion 180 which meshes with a gear 181 freely rotatable on the counterdrive shaft 21 which is mounted in bearings 182 and 183 in the base of the machine.

For vertically reciprocating the yoke 9 of the packaging material feeding mechanism C, the cam 20 is keyed directly on the shaft 21, while for rotating the vertical shafts S to drive the sealing mechanism and the label folding and applying mechanism, the shaft 21 has keyed thereon a cam disc 184 which cooperates with a slide 210.

The motor 22 is controlled by an electric switch in the usual manner, said switch being mounted in a control box W (see Figure 1). The motor is constantly driven while the circuit is closed, but it is desirable that the feeding mechanism C, sealing mechanism D, and the label folding and applying mechanism be started and stopped at intervals at the will of the operator. For this purpose, I provide a clutch between the gear 181 and the counterdrive shaft 21. This clutch is shown as including a toothed disc 185 rigidly connected to the gear 181 and cooperating with a clutch pawl 186 that is pivotally mounted on a clutch sleeve 187 keyed on the counterdrive shaft 21. As shown, this clutch pawl is approximately T-shaped and has its stem adapted to engage the toothed disc 185 and one arm 203 of its head normally influenced by a spring 189 so as to hold the stem normally in engagement with the toothed disc 185. The other arm 190 of the head of the clutch pawl cooperates with the head 191 of a foot lever 192 that is pivotally mounted at 193 at the bottom of the base of the machine.

To start the machine, the threadle 195 is pressed so as to swing the head 191 of the foot lever outwardly beyond the path of movement of the arm 190 of the clutch pawl 186, as shown by solid lines in Figures 41 and 42, so that as the clutch pawl rotates it will clear said head and permit the clutch to remain in engagement with the toothed disc 185. Preferably suitable detent means is provided for temporarily holding the foot lever 192 with the head 191 in this position and allow continued operation of the machine. When it is desired to stop the machine, the operator releases the treadle 195 of the foot lever so as to swing the head 191 inwardly into the position shown by solid lines in Figure 41 so that as the clutch sleeve 187 rotates, the arm 190 of the clutch pawl will ride upon the head 191 of the foot lever, as shown in Figure 45, and swing the stem of the pawl out of engagement

with the toothed disc 185. This results in a disconnection of the counterdrive shaft 21 from the driving gear 181. Preferably a spring 194 is provided to swing the foot lever and move the head 191 inwardly.

In some instances it may be desirable to operate the machine by hand, for example when initially threading the packaging material strips A through the machine to begin operations. For this purpose, I provide a hand-wheel 196 mounted on a shaft 197 which is slidably mounted in the base O of the machine and has a cone 198 on its inner end to cooperate with a cross-bar 199 of a lever 200 which includes two parallel side pieces, one at each side of the counterdrive shaft 21 and pivotally connected at their ends opposite the cross bar 199 to a pivot stud 201 secured in the base of the machine. This lever is normally actuated upwardly by a spring 202 so as to hold the crossbar 199 in engagement with the cone 198. The side pieces of the lever normally overlie the path of movement of the arm 203 of the head of the clutch pawl but are held in a position to clear said arm by the spring 202. When it is desired to disconnect the counterdrive shaft 21 from the power driving mechanism and operate the machine by hand, the shaft 197 is pushed inwardly of the base of the machine to cause the cone 198 to push downwardly on the crossbar 199. This moves the side pieces of the lever 200 downwardly so that one of them will engage the arm 203 of the clutch pawl and swing the pawl out of engagement with the toothed disc 185 (see Figures 41 and 46). For temporarily holding the shaft 197 in its inner and outer positions, I may provide a spring pressed ball 204 to seat in circumferential grooves 205 in the shaft.

The inner end of the shaft 197 has a beveled pinion 206 to mesh with a beveled gear 207 secured to the underside of the cam disc 184, so that when said pinion and gear are in mesh, as shown by dot and dash lines in Figure 46, the counterdrive shaft 21 may be rotated directly from the handwheel 196.

The shafts S for actuating the sealing mechanism and the label folding and applying mechanism are oscillated by crank arms 208 connected to the shafts below the top wall of the base of the machine (see Figures 41 to 45 inclusive), which are in turn connected by links 209 to the actuating slide 210 that is horizontally reciprocable in suitable guides 211 above the cam disc 184. This cam disc has a cam groove 212 in its upper surface in which rides a follower roller 213 that is journaled on the bottom of the actuating slide 210. The actuating slide has bifurcations 214 and 215 to span the respective shafts 12 and 21. With this construction, it will be noted that rotation of the cam disc 184 by the counterdrive shaft 21, will result in reciprocation of the actuating slide 210, and, through the links 209 and crank arms 208, will cause oscillation of the shafts S.

While I have shown my invention as embodied in certain details of structure, it should be understood that this is primarily for the purpose of illustrating the principles of the invention, and that many modifications and changes may be made in the details of structure without departing from the spirit or scope of the invention. It will be understood by those skilled in the art that the shapes of the cam surfaces may be modified and changed if desired to vary the timed relation of the operation of the various strip feeding mechanism C, sealing mechanism D, label folding and applying mechanism J, and the label carrier I. Moreover, any suitable circuit control mechanism, rheostats and the like, may be utilized for controlling the motor 22 and the various heaters of the sealing mechanism and label applying mechanism.

Also, any suitable vacuum pump and valve mechanism may be utilized for controlling the application of suction to the label folding plates and label carrier in the desired timed relation to the operation of the sealing mechanism, label applying mechanism, etc.

By proper adjustment of the stroke of the strip feeding mechanism, the position of the sealing mechanism and label applying mechanism on the shafts S, and the position of the severing mechanism G, the machine can be adapted to manufacture of packages of various sizes.

Having thus described my invention, what I claim is:

1. The method of forming and filling packages consisting in feeding a plurality of continuous layers of packaging material into juxtaposition and vertically downwardly with a step-by-step movement, successively at the end of each step of feeding of said layers securing said layers together to form a bag-like container having an open end and depositing substance to be packaged into said container through said open end, closing said open end at the end of the next step of feeding of said strips whereby to form a chain of closed containers, placing a label beneath the lower edge of the endmost closed container at the end of the step of movement of said chain, folding said label around and securing it to said edge of said endmost closed container of said chain during a subsequent step of movement, and severing the container from said chain at the end of the last-mentioned step of feeding of said layers.

2. A machine for forming and filling packages, comprising means for feeding a plurality of strips of packaging material into juxtaposition step-by-step and sealing said strips together at the end of each step to form a bag-like container having an open end, means operative subsequently to said sealing means at the end of said step for depositing substance to be packaged into said container through said open end, means for closing said open end of the container at the end of the next step of feeding of said strips whereby to form a chain of closed containers, means for placing a label transversely of the path of movement of the free end of the endmost closed container, means for folding said label around said end of said endmost container of said chain during a subsequent step of feeding of said chain, and means for securing said label to said container at the end of the last-mentioned step of feeding.

3. In a machine of the character described, means for feeding a plurality of layers of packaging material into juxtaposition, means for successively gripping and sealing said layers together and releasing them to form a bag-like container and including two opposed blocks movable toward and from each other and each formed with serrations complemental to the serrations of the other block for gripping and crimping said layers between them, pads movably mounted on said blocks to frictionally grip said layers between them beyond said serrations as said blocks move toward each other, and spring means influencing said pads to grip and

hold said layers between them as said blocks move apart to strip said layers from said serrations.

4. In a machine of the character described, the combination with means for forming a chain of filled packages and moving said chain vertically downwardly, of means for placing a label beneath and transversely of the lower end of the endmost container of said chain, and means for folding said label upwardly around and securing it to the lower end of the endmost package of the chain.

5. In a packaging machine, the combination of means for feeding layers of material in juxtaposition step-by-step, and means for securing said layers together to form a bag-like container having an open end at the end of each step of feeding, said means including opposed jaws movable alternately toward each other and apart, and filling means including a reciprocable spout and means for moving said spout into and out of said bag-like container as said jaws move apart and toward each other respectively.

6. The machine set forth in claim 2 with the addition of means for severing said endmost container from said chain during said last-mentioned step of feeding.

7. In a machine of the character described, means for guiding a plurality of strips of packaging material into juxtaposition, mechanism for successively gripping and sealing said strips together and releasing them to form a bag-like container having an open end, feeding means for successively exerting and releasing tension on said strips between said gripping and sealing mechanism and the source of supply of said strips while the strips are gripped and released respectively to withdraw and feed quantities of said strips from said supply step-by-step, means for depositing substance to be packaged into one container through said open end at the end of each step of feeding of said strips, and auxiliary feeding means for pulling said strips through said gripping and sealing mechanism, said gripping and sealing mechanism having means for closing said open end of the container at the end of the next step of feeding of said strips by said feeding means, whereby to form a chain of closed containers.

8. A machine of the character described including means for guiding a plurality of layers of packaging material into juxtaposition, means for successively gripping and releasing said layers, feeding means for successively exerting and relieving tension on said layers between the source of supply of said layers and said gripping means while said layers are gripped and released respectively by said gripping means, and auxiliary feeding means for pulling said layers through said gripping means when the layers are released thereby.

9. The machine set forth in claim 8 wherein said feeding means comprises a reciprocating member underlying said layers, and with the addition of means for reciprocating said member in timed relation to the gripping and releasing of said layers by said gripping means.

10. The machine set forth in claim 8 wherein said gripping and releasing means includes two opposed blocks movable toward and from each other and each formed to grip said layers at spaced zones, and with the addition of yieldably mounted pads in said blocks to frictionally grip between them said layers between said spaced zones to restrain stretching or tearing of said layers while they are under the tension produced by said feeding means.

11. A packaging machine including means for guiding a plurality of continuous strips of packaging material into juxtaposition, a sealing mechanism comprising a pair of opposed sealing blocks movable toward and from each other and having portions to successively grip said strips between them for securing said strips together simultaneously along their longitudinal margins and transversely to form a bag-like container having an open end and thereafter release the strips, means for depositing substance to be packaged into said container through said open end after release of the strips by said blocks, and means for moving said strips between said blocks after said substance has been deposited in said container and while said strips are released, said sealing blocks having other portions to grip and secure said strips together transversely at said open end of the container to close the latter as said blocks next move toward each other and grip the strips between them to form another bag-like container.

12. The packaging machine set forth in claim 11 with the addition of a pair of parallel shafts, a frame mounted thereon, means mounting said sealing blocks on said frame including a crank arm rigidly mounted on each said shaft and supporting said frame and each pivotally connected to one of said sealing blocks, and means for simultaneously oscillating said shafts to move said sealing blocks toward and from each other.

13. In a machine of the character described, the combination of means for forming a chain of filled packages and moving said chain vertically downwardly step-by-step, means for folding a label beneath the lower end of said chain whereby as said chain is fed downwardly the lower end of the endmost container will enter the fold of said label, and means for securing said label to said container along said fold at the end of a step of movement of said chain of containers.

14. In a machine of the character described, the combination with means for forming a chain of filled packages and moving said chain vertically downwardly step-by-step, of a pair of horizontal folding plates movable horizontally toward and from each other below the lower end of said chain to receive said chain of containers between them, means for holding a label on said plates in bridging relation to the space between them so that as said plates move together said label will be folded or bent downwardly, means for actuating said plates in timed relation to the steps of feeding said chain whereby the lower end of the endmost container will enter the fold of the label on a step of feeding of the chain, and means for securing said label to said container along said fold.

15. In a machine of the character described, the combination with means for forming a chain of filled packages and moving said chain vertically downwardly step-by-step, of a pair of horizontal folding plates movable horizontally toward and from each other below the lower end of said chain to receive said chain of containers between them, means for holding a label on said plates in bridging relation to the space between them so that as said plates move together said label will be folded or bent downwardly, means for actuating said plates in timed relation to the steps of feeding said chain whereby the lower end of the endmost container will enter the fold of the label on a step of feeding of the chain, presser jaws to

grip and press the folded portion of said label and said end of said container between them to secure said label to said container.

16. The machine set forth in claim 4, with the addition of means for severing said endmost container from said chain as said label is secured to the container.

17. The machine set forth in claim 14, with the addition of cooperating shear blades mounted above said folding plates and movable therewith to sever the endmost container from said chain as said label is secured to the container.

18. The machine set forth in claim 14, wherein said means for holding the label on said folding plates comprises ducts in the upper surfaces of said plates to be overlaid by said label, and means connecting said ducts to a vacuum pump, whereby said labels are held on the plates by suction.

19. The machine set forth in claim 14, with the addition of means operable in timed relation to the feed of said chain for feeding labels to said label folding plates.

20. The machine set forth in claim 14, with the addition of means for holding a stack of labels, a label carrier for conveying labels one by one from said stack to said folding plates, and means for actuating said label carrier in timed relation to the feed of said chain of containers.

21. The machine set forth in claim 14, with the addition of means for holding a stack of labels, a label carrier for conveying labels one by one from said stack to said folding plates and including a picker bar to contact with the top label of said stack and having suction ducts, means for connecting said ducts to a vacuum pump whereby the labels are caused to adhere to said picker bar by suction, and means for actuating said label carrier in timed relation to the feed of said chain of containers.

22. A packaging machine including a frame, means thereon for forming containers, a pair of vertically disposed parallel shafts journaled on said frame, means for simultaneously oscillating said shafts, means for folding and securing labels on said containers including an auxiliary frame stationarily supported on said shafts, a pair of label folding and applying members mounted on said auxiliary frame to move toward and from each other, and an operative connection between each of said shafts and one of said members for actuating the members.

23. In a packaging machine, the combination with a source of supply for two continuous strips of packaging material, of means for guiding said strips into juxtaposition, means for periodically gripping and holding the juxtaposed portions of said strips simultaneously, a reciprocable yoke having an arm relatively movably engaging each strip between said holding means and said source of supply, means for reciprocating said yoke in timed relation to operation of said gripping means to alternately exert and release tension on both of said strips at the same time while said strips are gripped and released respectively to withdraw quantities of said strips from said source of supply, and auxiliary feeding means for pulling said strips beyond said gripping means when said strips are released thereby and tension on said strips is released by said yoke.

24. The steps in the method of forming and filling packages consisting in feeding two continuous strips of packaging material into juxtaposition step-by-step, securing said strips together simultaneously along their longitudinal margins and transversely of the strips at the end of each step of movement to form a bag-like container having an open end and simultaneously closing the open end of the next preceding bag-like container that was formed during the preceding step of feeding of said strips, and depositing a substance to be packaged through said open end of each container prior to the beginning of each step of movement of said strips.

25. The method of forming and filling packages consisting in feeding a plurality of continuous layers of packaging material into juxtaposition with a step-by-step movement, successively at the end of each step of feeding of said layers securing said layers together to form a bag-like container having an open end and depositing substance to be packaged into said container through said open end, closing said open end at the end of the next step of feeding of said strips whereby to form a chain of closed containers, folding and placing a label transversely of the free end of the endmost container of the chain and directing said end of the endmost container of said chain into the fold of said label during a subsequent step of feeding of said layers, and securing said label to said container along said fold at the end of the last-mentioned step of feeding.

26. A packaging machine including a frame, means thereon for supplying layers of packaging material in juxtaposition, a pair of vertically disposed parallel shafts journaled on said frame, means for simultaneously oscillating said shafts, package forming and sealing mechanism including an auxiliary frame stationarily supported on said shafts, sealing jaws mounted on said auxiliary frame to move toward and from each other to seal said strips together and form packages, and an operative connection between each of said shafts and one of said sealing jaws to actuate said jaws toward and from each other, and means for folding and securing labels on said containers including an auxiliary frame stationarily supported on said shafts, a pair of label folding and applying members mounted on said auxiliary frame to move toward and from each other, and an operative connection between each of said shafts and one of said members for actuating the members.

27. A packaging machine including a frame, means thereon for supplying layers of packaging material in juxtaposition, a pair of vertically disposed parallel shafts journaled on said frame, means for simultaneously oscillating said shafts comprising a crank arm on each shaft, a drive shaft, a cam on said drive shaft, a slide having a follower engaging said cam, and a link pivotally connecting said slide to each said crank arm, package forming and sealing mechanism including an auxiliary frame stationarily supported on said shafts, sealing jaws mounted on said auxiliary frame to move toward and from each other to seal said strips together and form packages, and an operative connection between each of said shafts and one of said sealing jaws to actuate said jaws toward and from each other.

28. A packaging machine including a frame, means thereon for supplying layers of packaging material in juxtaposition, a pair of vertically disposed parallel shafts journaled on said frame, means for simultaneously oscillating said shafts, package forming and sealing mechanism in-

cluding an auxiliary frame stationarily supported on said shafts, sealing jaws mounted on said auxiliary frame to move toward and from each other to seal said strips together and form packages, and an operative connection between each of said shafts and one of said sealing jaws to actuate said jaws toward and from each other and means for folding and securing labels on said containers including an auxiliary frame stationarily supported on said shafts, a pair of label folding and applying members mounted on said auxiliary frame to move toward and from each other, and an operative connection between each of said shafts and one of said members for actuating the members, said means for simultaneously oscillating said shafts comprising a crank arm on each shaft, a drive shaft, a cam on said drive shaft, a slide having a follower engaging said cam, and a link pivotally connecting said slide to each said crank arm.

29. A packaging machine including a frame, means thereon for supplying layers of packaging material in juxtaposition, a pair of vertically disposed parallel shafts journaled on said frame, means for simultaneously oscillating said shafts, package forming and sealing mechanism including an auxiliary frame stationarily supported on said shafts, sealing jaws mounted on said auxiliary frame to move toward and from each other to seal said strips together and form packages, and an operative connection between each of said shafts and one of said sealing jaws to actuate said jaws toward and from each other, and means for folding and securing labels on said containers including an auxiliary frame stationarily supported on said shafts, a pair of label folding and applying members mounted on said auxiliary frame to move toward and from each other, and an operative connection between each of said shafts and one of said members for actuating the members, both of said auxiliary frames being vertically slidably adjustable on said shafts, a screw-threaded standard on said frame loosely passing through each of said auxiliary frames parallel to said shafts, and nuts each underlying a portion of one of said auxiliary frames and threaded on said screw-threaded shaft for adjusting said auxiliary frames longitudinally of said shafts.

LEROY L. SALFISBERG.