Nov. 15, 1938. N. B. CHAVEAS ET AL 2,136,876

AUTOMATIC PACKAGING MACHINE

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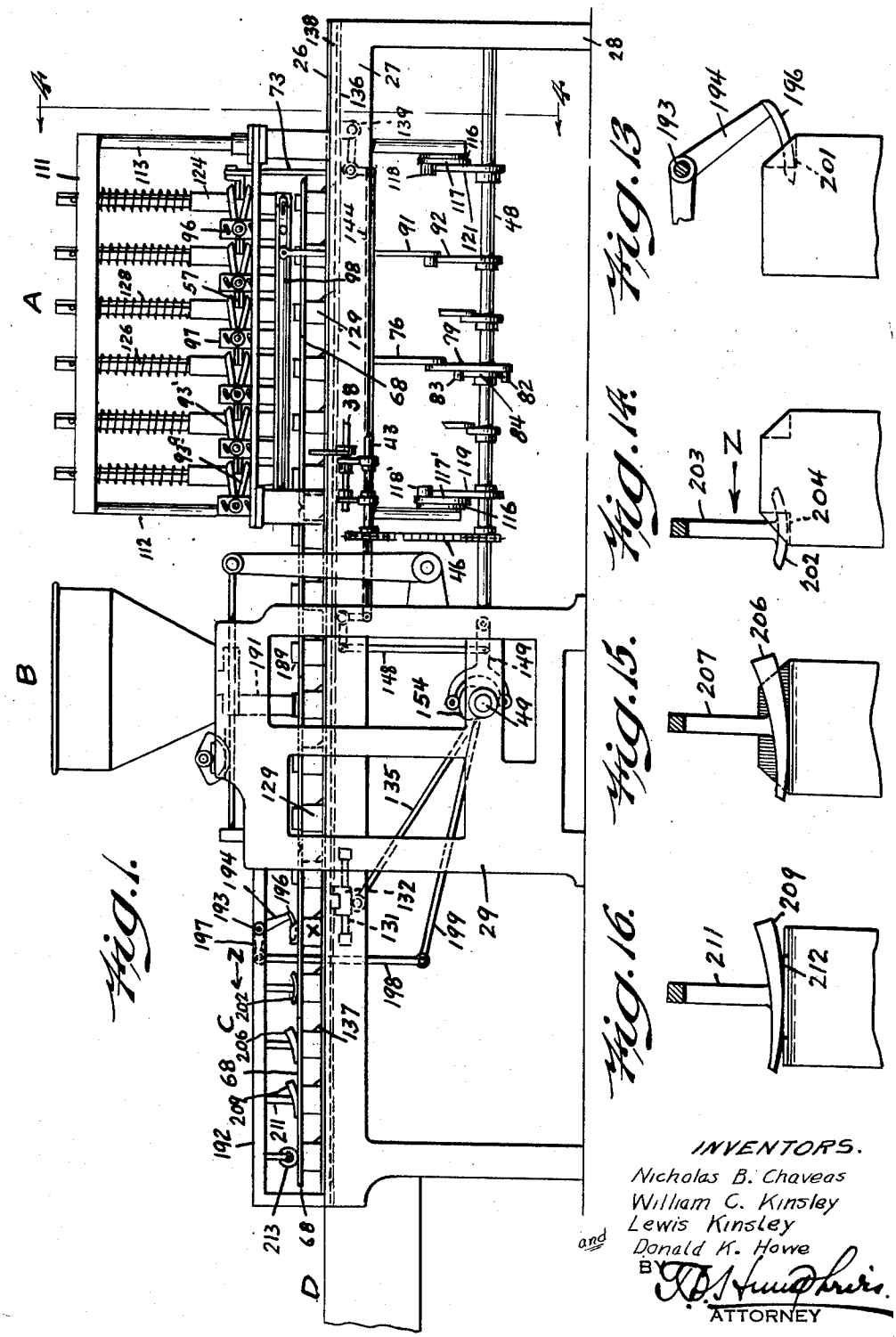


Fig. 1.

Fig. 13

Fig. 14.

Fig. 15.

Fig. 16.

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AUTOMATIC PACKAGING MACHINE

Filed Oct. 2, 1936 7 Sheets-Sheet 2

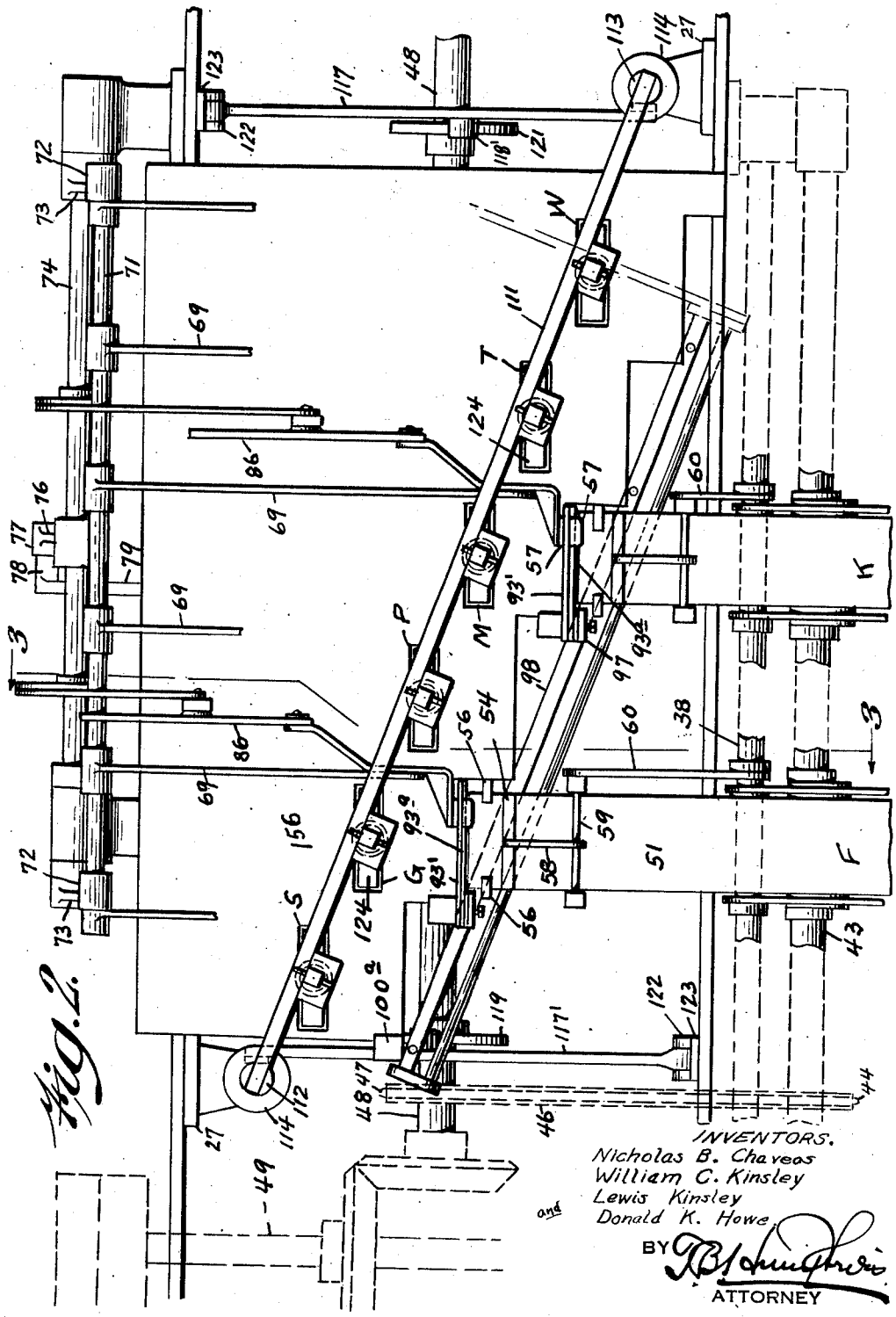


Fig. 2.

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AUTOMATIC PACKAGING MACHINE

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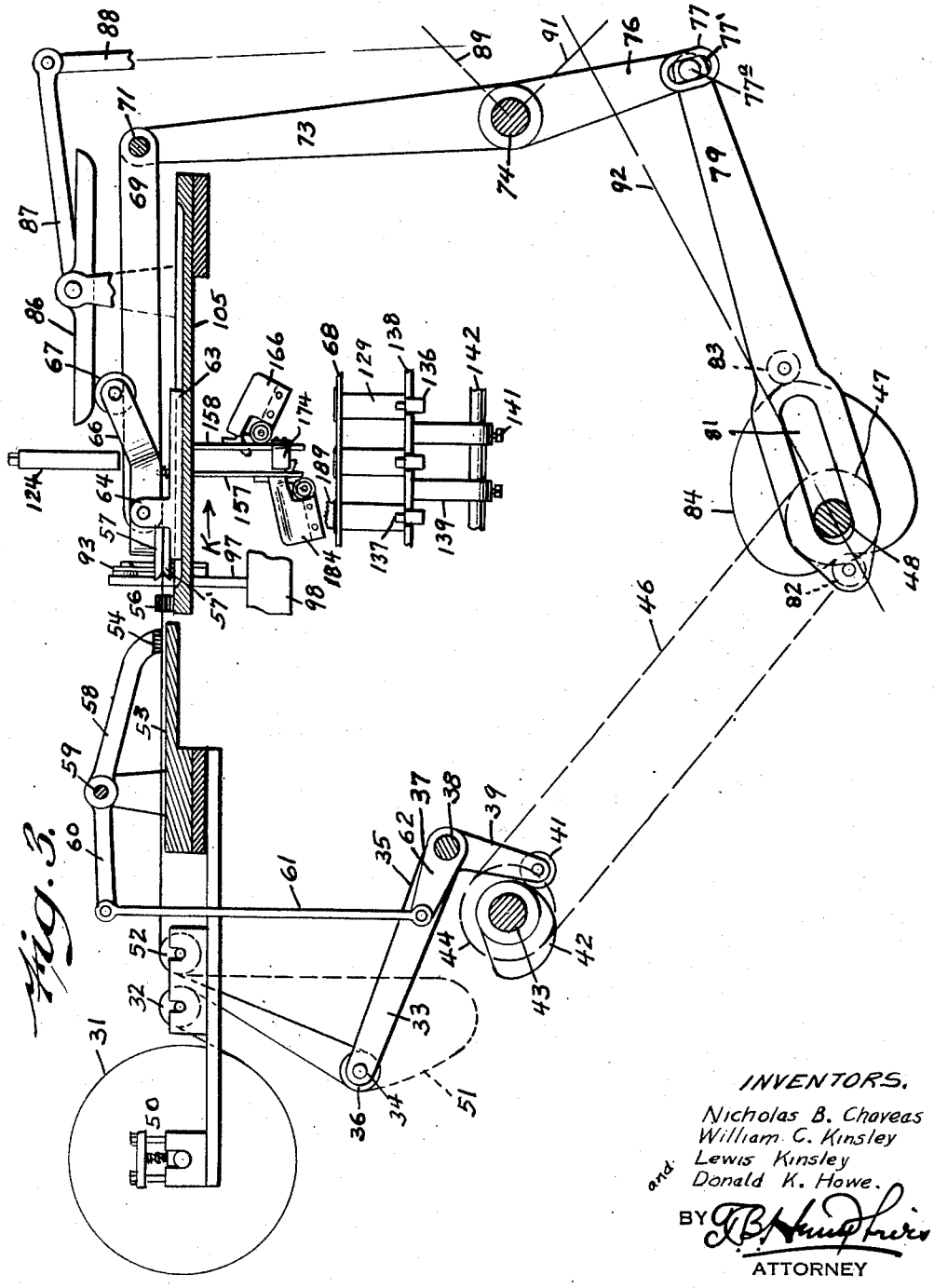


Fig. 3.

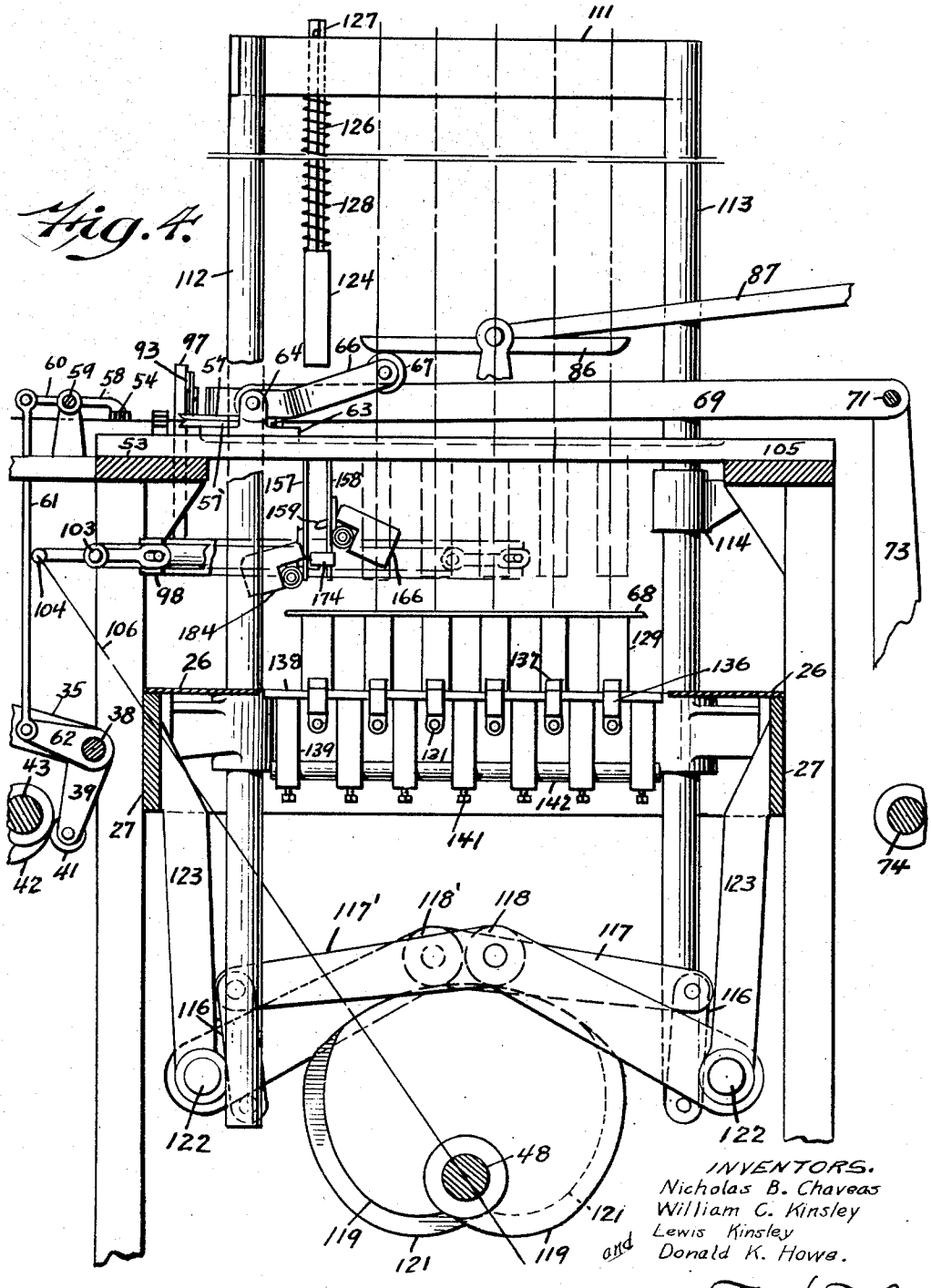
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Fig. 4.



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AUTOMATIC PACKAGING MACHINE

Filed Oct. 2, 1936 7 Sheets-Sheet 5

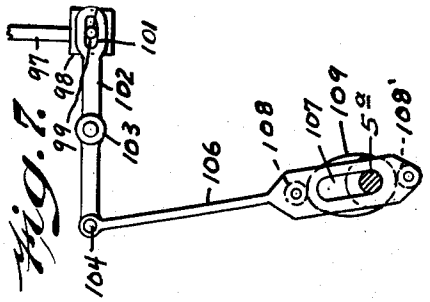


Fig. 7.

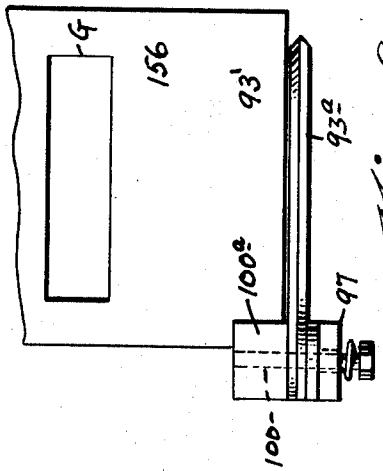


Fig. 6.

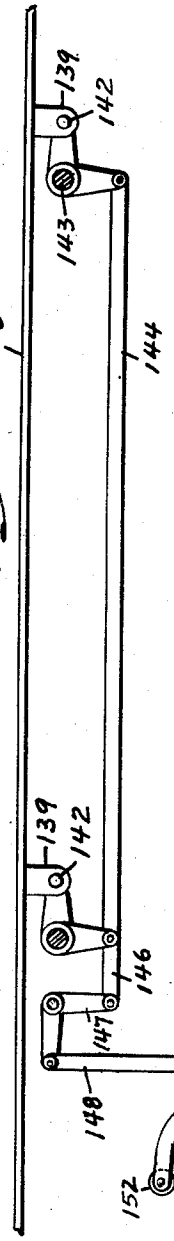


Fig. 8.

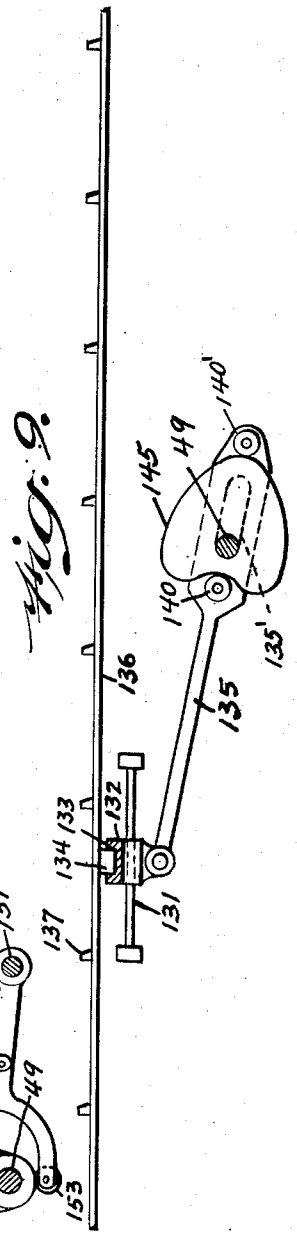


Fig. 9.

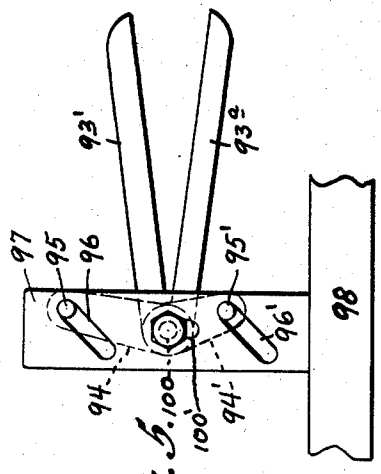


Fig. 5.

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AUTOMATIC PACKAGING MACHINE

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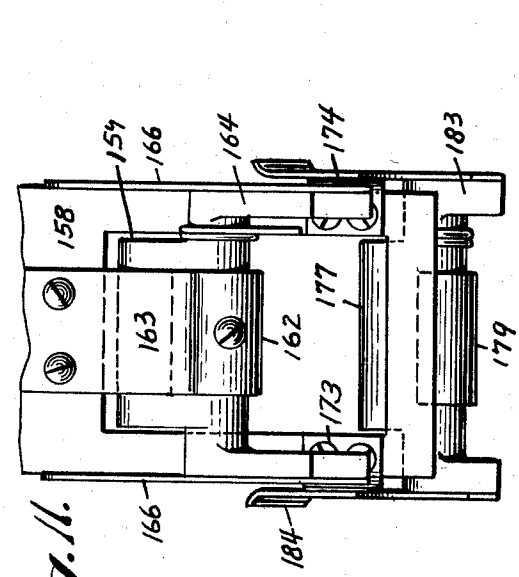


Fig. 11.

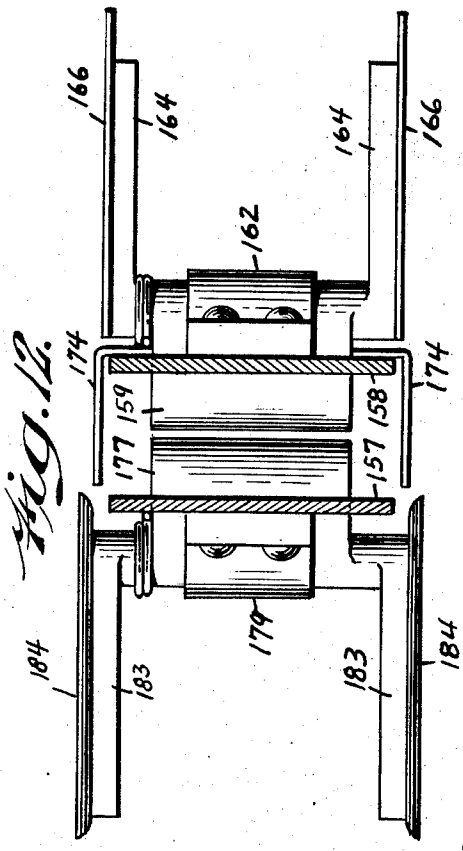


Fig. 12.

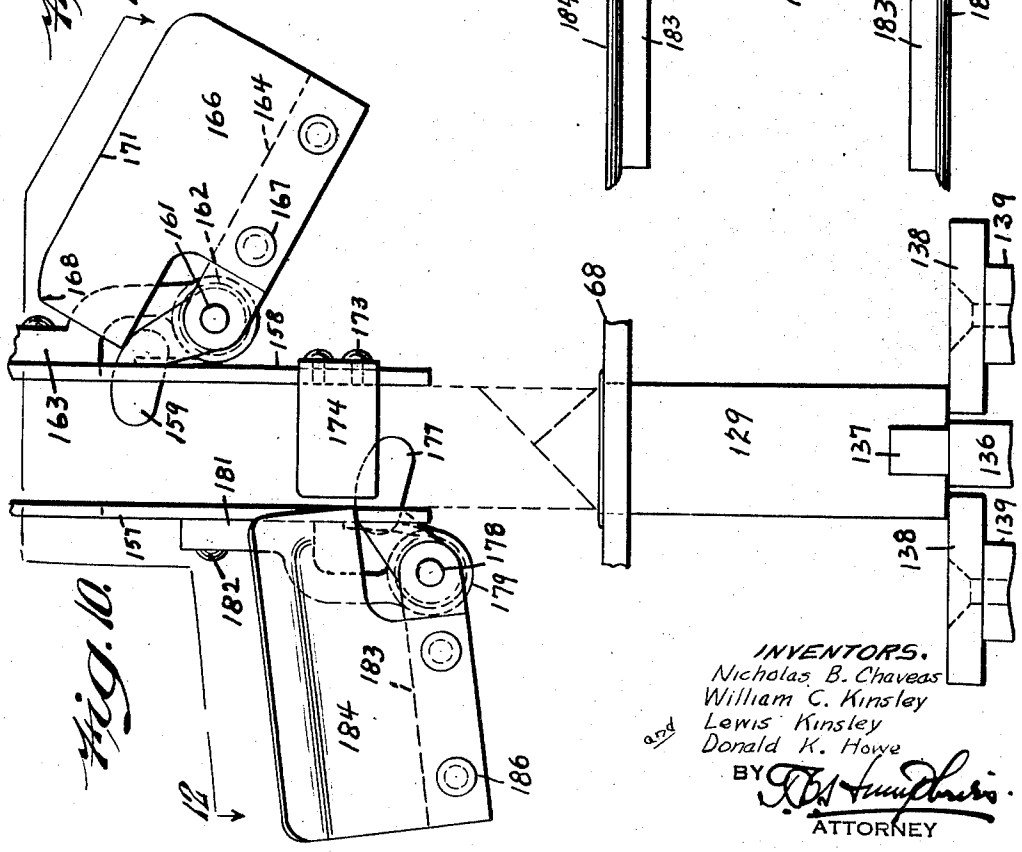


Fig. 10.

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AUTOMATIC PACKAGING MACHINE

Filed Oct. 2, 1936 7 Sheets-Sheet 7

Fig. 17.

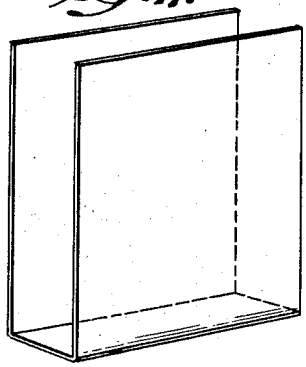


Fig. 18.

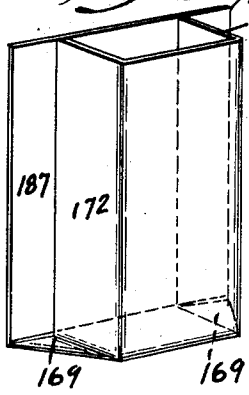


Fig. 19.

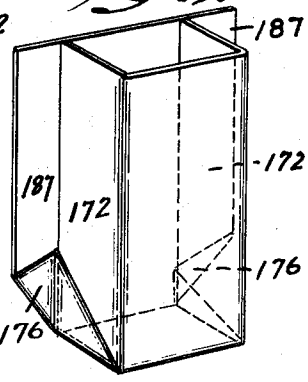


Fig. 20

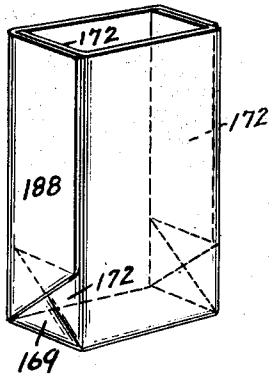


Fig. 21

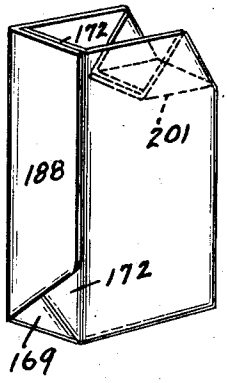


Fig. 22.

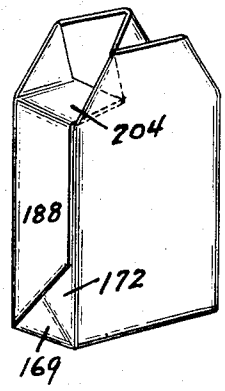


Fig. 23.

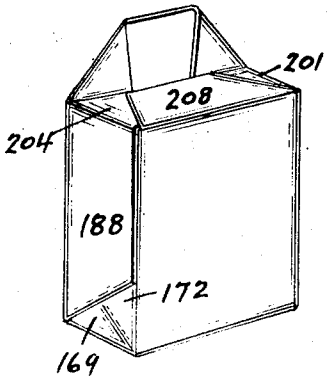
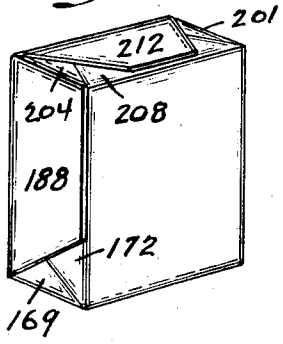


Fig. 24.



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Patented Nov. 15, 1938

2,136,876

UNITED STATES PATENT OFFICE

2,136,876

AUTOMATIC PACKAGING MACHINE

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Application October 2, 1936, Serial No. 103,710

53 Claims. (Cl. 93—3)

This invention relates to automatic packaging machinery, and particularly to mechanisms for packaging semi-liquids.

The invention broadly includes a novel method and apparatus to produce packaged food products, such as cheese, ice cream or the like, and comprises equipment to form a wrapper in package shape, which said wrapper is supported in a rigid pocket or mold, apparatus for depositing a predetermined quantity of the food product in semi-liquid consistency into said wrapper, apparatus for closing said wrapper, and apparatus for chilling the same in order to harden the product, whereby the same contracts and permits the completely wrapped food product to discharge from the pocket or mold.

The object of the invention is to provide mechanisms for completely enclosing a predetermined quantity of semi-liquid material in a thin pliant wrapper and then solidifying such material while holding the same against deformation.

Another object of the invention is to provide mechanisms for accomplishing the above object automatically, and without the necessity for any hand operations.

Still another object of the invention is to provide a package retained in its folded form, so that none of the semi-liquid material can escape therefrom before hardening.

A still further object of the invention is to provide means for solidifying the semi-liquid material while holding the formed package to prevent deformation.

According to the invention, the apparatus comprises means carrying material from which the container is to be formed, means for withdrawing a predetermined amount of said material, means for severing said withdrawn material, plunger means for passing the severed material through forming dies which fold the bottom and sides of said material and deposit the cup thus formed in a tray having pockets to receive said partially formed container, predetermined quantity dispensing means for depositing semi-liquid material into said cup-shaped container, die means for folding the upper end of said container material, whereby the semi-liquid material is completely enclosed by said container, means for smoothing down the folded upper ends of said containers, and refrigerating means for hardening the material in said container.

The drawings illustrate an embodiment of the invention, and the views therein are as follows:

Figure 1 is a side elevation of the machine with certain parts omitted, so that certain mechanisms may be more clearly shown,

Figure 2 is a plan view of the mechanism employed for forming the containers to be filled with parts broken away,

Figure 3 is a vertical sectional view on the line 3—3 of Figure 2 with certain parts omitted,

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a side view of the scissors and their mounting,

Figure 6 is a plan view of the same,

Figure 7 is a detail view of the mechanism for operating the scissors,

Figure 8 is a detail view showing the mechanism for raising the containers,

Figure 9 is a detail showing the mechanism for advancing the containers,

Figure 10 is a side view of the mechanism employed for forming the cup-like container into which the material is to be poured,

Figure 11 is a side view of the same,

Figure 12 is a section on the line 12—12 of Figure 10,

Figure 13 is a detail showing mechanism for placing the first fold in the top of the filled container,

Figure 14 is a like view showing the mechanism for placing the second fold therein,

Figures 15 and 16 are like views showing the manner in which the final folds are placed in the top of the container,

Figures 17 to 24 are perspective views showing the progressive steps of folding the container.

Referring to Figure 1, the apparatus broadly comprises a table 26 having a side frame 27 supported by standards 28 which rest upon the floor. Mounted on this table are the means A for producing the cup-like container having an open top which is deposited in the pockets in trays, as later explained. A hopper B containing the semi-liquid material to be dispensed into these cup-shaped containers is mounted on side castings 29, secured to the side frames 27 of the table. Beyond the hopper and its attendant mechanism is the apparatus C for folding the tops of the cup-shaped containers and smoothing the same down.

D represents a chilling or refrigerating apparatus, and this apparatus may comprise either a cold liquid bath or cold air blast for solidifying the material within the closed container. No special apparatus has been shown because these are old in the art, but the invention includes any apparatus which will chill and solidify such materials as cheese, ice cream or the like.

Container material feeding and cutting mechanism

Referring now to Figure 3, the material for forming the container is thin and pliant and is shown in the form of a roll 31. The material is withdrawn from said roll 31 over an idling roll 32 by one arm 33 of a bell crank 35 on whose free end 34 is the idling roll 36, while its other end 37 is mounted on the shaft 38. This bell

crank is fulcrumed on the shaft 38, and its other arm 39 has an idle roller 41, which is engaged by the cam 42 mounted on the shaft 43. This shaft 43 has a sprocket wheel 44 for receiving a chain 46, which passes over a like sprocket 47 on the main auxiliary shaft 48. This main auxiliary shaft 48 is driven by the main shaft 49. Spinning of the roll 31 may be prevented by any suitable tension device, such as that indicated by the numeral 50. After passing over the idling rolls 32 and 36, the slack container material 51, which has been pulled out by the operation of the bell crank, passes up over another idling roll 52, and lies upon a plate 53, and beneath a snubber 54, and between positioning clips 56 where, in the ordinary operation, it is grasped by gripping fingers 57 and 57' and wrenched in the direction of the arrow K a sufficient distance to provide material for the formation of a single container. This snubber is mounted on the end of a rock arm 58 fulcrumed at 59, while an arm 60 also fulcrumed at 59 has its end connected with a link 61 whose other end is pivotally mounted on a lever 62 mounted on the shaft 38.

The operation of this snubbing mechanism is such that when the gripping fingers 57 and 57' are moved in the direction of the arrow K, as hereinafter explained, the snubber 54 will be raised, and at the time or just prior to the time that the gripping fingers 57 reach the end of their stroke, the mechanism of the snubber operates so that the snubber is lowered and prevents any further withdrawal of said material.

The gripping finger 57 is connected to the sliding member 63 which has upstanding bifurcated arm 64 in which the gripping lever 66 is pivotally mounted. This gripping lever has the gripping finger 57 at one end of the same, while the other end is offset, and provided with an idle roll 67 on the end thereof.

The mechanism thus described, with the exception, of course, of the shafts, cams, etc., will be repeated six times, as shown in Figure 2. These mechanisms are staggered in order that the trays which have six pockets aligned laterally may each be provided with a partially formed container at each cycle of the machine. For convenience sake, these trays shown in Figure 1 at 68 may each have eighteen pockets, six in width and three in length, and as the trays are fed through the machine, as hereinafter explained, they will be practically continuous, and the rolls of container material will all be fed out simultaneously, but the extensions of the slack portions 51 will be of different lengths, and in staggered relation, such as shown in Figure 2. The clips 56 and gripping fingers 57 and 57' will, therefore, also be in staggered relation, and Figure 2 shows two of these arrangements, although the machine itself as constructed is provided with six. This number, however, is optional, as any width of machine with varying numbers of pockets may be provided.

Each of the members 63 is provided with a link 69 which is bolted onto the bifurcated arm 64 of the member 63 at its one end while its other end connects with the rod 71. The ends of the rod 71 are fastened in pads 72 on one end of a lever 73. The other end of this lever 73 is fastened to the shaft 74. This shaft 74 is provided intermediate its ends with a lever 76 whose lower end has a pad 77 with an elongated slot 77' therein. Fitting within the slot 77' is a stud 77a on the end of a cam operated crank 79. This crank has its lower end slotted as at 81 to receive the shaft 48, and is provided with followers 82 and 83 which engage the heart cam 84 for reciprocating said crank. As this crank 79 is reciprocated, it will, through the connection of the levers 76 and 73 with the rods 71, operate to reciprocate the link 69, which said link is fastened at its forward end to the bifurcated arm 64 of the member 63. Pivotally mounted midway its ends is a rail 86 against the lower surface of which the idle roll 67 of the gripping lever 66 rests. An arm 87 is secured to the rail 86, and its outer end is pivotally connected to a link 88 whose other end is pivoted to one arm of a bell crank 89, which said bell crank is fulcrumed on the shaft 74 while the end of its other arm 91 is pivotally connected to a slotted crank 92, which is similar to the crank 79, and which said crank has its slotted end engaging the shaft 48 in the identical manner in which the crank 79 engages the same. When the link 69 has been operated through the crank 79 and attendant mechanism to draw the container material away from the clips 56, and sufficient of said material has been withdrawn for forming the package, the crank 92 will operate the rail 86 bearing down upon the idle roll 67, and will thus raise the gripping finger 57 releasing the container material.

Just prior to the operation of the crank 92 to release the container material, as just described, the container material is cut off at the point 93 by means of scissors which are shown in detail in Figure 5. These scissors whose blades 93' and 93a operate to cut this material, have their ends provided with arms 94 and 94' which said arms respectively are provided with pins 95 and 95', which operate respectively in oblique long slots 96 and 96' respectively. These slots are contained in standards 97 mounted in a cross-head 98. These scissor blades have a bolt 100 which passes a slot 100' in the standard 97, and which is fastened into the lug 100a (see Figures 2 and 6) upstanding from the slit plate 105 in which the member 63 operates. The cross-head 98 at each end of the same has a pin 99 operating in the elongated slot 101 of one end of rocker arms 102, whose pad 103 is pivotally mounted, as shown in Figures 4 and 7. These rocker arms have their other ends pivotally connected at 104. Cranks 106 whose lower ends have slots 107 for receiving the stub shaft 5a have cam followers 108 and 108' to engage cams 109 mounted on said shaft 5a for operating said cross-head to raise and lower the same, and thereby to open and close the scissor blades. This stub shaft 5a is operatively connected to shaft 48. (See Fig. 4.)

The gripping fingers 57 and 57' are so timed that after the container material has been severed by the scissor blades, and the scissor blades then opened, said gripping fingers will pass between said blades and grip the end of the container material and draw the same outward as previously explained.

Plunger mechanism for placing container material

In describing the formation of the container, only one operative mechanism will be discussed, but it will be understood that this mechanism for a large part is in multiple, and in the present illustration, it is intended that six of these containers be formed simultaneously.

The machine is provided with a cross-head 111 (see Figures 1, 2 and 4) which has its ends fastened to the tops of vertically reciprocating rods 112 and 113. These rods are mounted in suitable bearings 114, 115, etc., and their lower ends are

each provided with a link 116 having one end pivotally fastened thereto, while the other ends are respectively pivotally connected with cam arms 117 and 117', the former of which is provided with an idle cam following roll 118 adapted to be engaged by the cam 119 while the other arm is provided with an idle cam following roller 119' adapted to be engaged by the cam 121. These cams are both mounted on the shaft 48. The other ends of said cam arms 117 are pivotally mounted at 122 in rigid depending brackets 123 mounted on the table frame 27. Mounted along the cross-head 111 and in staggered relation are plungers 124 whose shafts 126 extend through said cross-head, and are provided with means, such as a cotter pin 127 at the upper end of the same for holding them in said cross-head while a spring 123 surrounds the shafts 126, and is held between the plunger 124 and the cross-head 111. This spring is merely intended for the purpose of safety, and in case the plunger is prevented from entering the pocket 129 of the tray 68, as later discussed, will permit the said spring to be compressed and the plunger pushed upward. During ordinary working conditions, however, the tension of this spring is such that its presence is negligible.

The trays 68, each having as many pockets side by side as there are plungers 124, are intended to be fed into the machine, end to end, so that the longitudinal spacing between the pockets of the end rows of successive trays will be identical with the spacing between the longitudinal rows of pockets on an individual tray. By this method of location, a pocket will always be directly aligned beneath the plunger 124 and as the container material is formed and deposited into one series of staggered pockets, another series of staggered pockets will be immediately advanced for the next operation of the plungers. The mechanism for advancing these trays with their pockets will now be discussed prior to the discussion of the die mechanism for forming the container material into cups.

Tray advancing mechanism

Referring now to Figures 1 and 9, each of the side frames 27 is provided with a slide rail 131, while a cross-head 132 extends between said rails, and is slidable thereon. This cross-head has a groove 133 for receiving a shoulder 134 on the bottom of the tray advancing rail 136. This rail has lugs 137 equally spaced and between which the bottoms of the tray pockets will rest and engage these lugs for advancement through the machine.

The bottom of the cross-head is provided with a body to which the arm 135 of a crank is pivotally mounted. This crank is provided with a slot 135' in which the shaft 49 operates and the crank is also provided with cam followers 140 and 140' which are engaged by the cam 145 for reciprocating the cross-head 132.

The function of the lugged rails 136 and tray advancing plates 138 is as follows: The lugs on the rail 136 move the trays formed exactly the distance between the pockets of the trays, and when they have been advanced by virtue of the cross-head 132 with its operating mechanism, the tray raising plates 138 raise the trays and permit the return of the lugged rail to its original position, whereupon after the lowering of the tray raising plate 138, the trays may be again advanced the distance of one pocket by the operation of the advancing rail. The tray advancing rail 136 extends to the right hand standard at the front of the machine, as shown in Figure 1, so that the trays 68 may be fed from that point with their lateral edges contacting.

Referring now to Figures 4 and 8, the tray raising plates 138 are located between the advancing rails 136 and each of these plates contacts a portion of the bottoms of adjacent pockets. These plates are each provided with downwardly extending lugs 139 in which a set screw 141 prevents lateral movement thereof on the rods 142. A bell crank fulcrumed at 132 have their one ends engaging the rods 142 and their other ends connected with a connecting rod 144, while said connecting rod has an extension 146, while the end thereof is pivotally connected to one arm of a bell crank 147, while the other end of said link is pivoted to the arm 148 of a yoke 149, the outer end of said yoke being mounted on a stub shaft 151. The yoke arms are provided with idle rolls 152 and 153 which follow a cam 154 mounted on the shaft 49.

Bottom and side folding mechanism for container

After the several pieces of container forming material have been severed by means of the scissors hereinbefore described, these pieces of material are centrally located above an oblique line of pockets extending transversely of the machine, and in accordance with the arrangement shown in Figure 2, that is to say, the material from the roll F will be centrally located over the rectangular opening G in the plate 156 aligned with a tray pocket (also see Figure 6) while the severed material from the roll K will be centrally located over the opening M aligned with another pocket of the tray. Likewise a severed piece of container forming material from a roll between the rolls F and K, and not shown in Figure 2, will be centrally located over the opening P, which is aligned with a tray pocket between the pockets G and M. In like manner, severed sections of container material will be centrally located over the openings S, T and W. During the operation of the machine, each cycle thereof will place a severed piece of container forming material in the positions just described.

The plungers 124 carried by the cross-head 111 are aligned above the openings S, G, P, M, T and W.

Upon the operation of the cams 119 and 121 which lower the cross-head 111, the plungers 124 will engage the center of said severed container material directly over the openings aforesaid in the plates 156, and will bend said material across the bottoms and up along the sides of said plungers, so that the same may pass through said plate openings S, G, etc., and into the form shown in Figure 17.

In the description of the bottom and side forming means for the container, we will refer to one mechanism only, such for example as the plunger 124 shown in connection with the opening G in the plate 156 of Figures 2 and 6.

After the plunger has pressed the bottom of the material through the opening G in the plate 156, the bottom of said plunger carrying said material will pass downward between side plates 157 and 158 (see Figures 3, 4 and 10) and the material covered bottom of said plunger will first strike against the tongue 159, which is fulcrumed by the pin 161 in a bearing 162 of a bracket 163. Integrally formed with the tongue 159 are forming plate supports 164 to which the

forming plates 166 are secured by screws 167. These forming plates 166 are separated by a distance substantially equal to the width of the side plate 158. As the bottom of the material covered plunger strikes the tongue 159, the same will be pushed downward and the forming plates 166 rotated about the pin 161, so that the edges 168 of said forming plates, as they pass between the side plates 157 and 158 will engage the container material at the corner of the plunger and will first turn in the flaps 169 shown on the partially formed container illustrated in Figure 18.

As the plunger continues downward, after forming the flaps 169, the edges 171 of said forming plates 166 will further turn the material against the plunger, so as to form the first side flaps 172. During this last operation, the tongue 159 has been pushed entirely out of the space between the side plates 157 and 158.

It will, of course, be understood that the downward motion of the plunger 124 is uniform and continuous, although the several actions of the same are here independently described, that is to say there are no dwells in the plunger movements during the forming of the bottom and side flaps of the container.

Fastened to the side plate 158 by the screws 173 are transverse forming plates 174 which, as the plunger continues downward, will engage the flaps 169 (see Figures 18 and 19) and will turn said flaps against the side flaps 172 forming the flaps 176, as illustrated in Figure 19.

Continuing downward the plunger carrying the container material in the position shown in Figure 19, will strike with its bottom the tongue 177 normally extending between said side plates 157 and 158. This tongue 177 is fulcrumed by the pin 178 located in a bearing 179 of a bracket 181 secured to the side plate 157 by screws 182. Integrally formed with said tongue are forming plate supports 183 to which the forming plates 184 are secured by screws 186. These forming plates 184 are separated by a distance substantially equal to the width of the side plate 157. As the bottom of the material covered plunger strikes the tongue 177 the same will be pushed downward and the forming plates 184 rotated about the pin 178, so that the same will strike against the material shown at 187 in Figure 19, and press the same over against the flap 172, so as to form the flap 188.

As the plunger continues downward carrying the partially formed container, as shown in Figure 20, it will pass directly into the pocket 129 of the tray 68, pushing said container so that its bottom rests in the bottom of said pocket, while the tray 68 is in its raised position on the tray raising plates 138 shown in Figure 4, and in detail in Figure 8. The cams 119 and 121 (see Figure 4) will now operate to raise the cross-head 111, and thus withdraw the plungers from the pockets of the trays 68 up between the side plates 157 and 158, and to their normal positions, as shown in Figures 1, 3 and 4.

The plungers 124 are open at the top and bottom with the exception of where they are fastened to the rods 126, so that as the partially formed container of Figure 20 is pushed into the pocket 129 of the tray 68, the material firmly contracts the sides of said pocket and the plunger can be readily removed without disturbing the deposited container which is securely held therein by its closed bottom.

As the trays have the partially formed containers of Figure 20 deposited in the pockets thereof, they are advanced step by step by means of the lugged advancing rail 136, and advanced under the hopper B, which is provided with material to be deposited in said containers, whose open top 189 (see Figure 3) extends above the top of the tray 68. This filling is accomplished with any type of predetermined quantity server, and the measured material passes downward through drop nozzles 191 which are aligned above the open top containers.

While the apparatus may be employed for packaging many different materials in semi-liquid form and capable of being hardened, an illustration is that of cheese or the like wherein the cheese in semi-liquid form is deposited into a partially formed container taking the form of a receptacle, folded at its lower end and sides, and sustained in said form by the walls of a rigid pocket, and then folding the upper part of said receptacle to completely enclose the material therein.

The container forming material used for packaging cheese or the like would take the form of a double material wherein the inner material is waxed paper or the like and the outer material tin foil or the like.

After the partially formed containers with their open tops are filled with the material, they continue to advance in step by step movement, as before explained, advancing to the mechanism C for closing the same.

Mechanism for forming the top flaps to close the container

Suitable bracket means 192 may be provided for carrying a shaft 193 on which the arm 194 is securely fixed. This arm is provided at its lower end with a shoe 196 as hereafter explained. An arm 197 integral with the link 198 is also securely fixed to said shaft 193. The lower end of the link is pivotally connected with a lever 199, which is reciprocated by cam means not shown and mounted on the shaft 49. The action of the mechanism just explained is as follows: When the tray 68 carrying the pocket X (Figure 1) has been moved by the lugged rail 136 to a position just forward of the shaft 193, the lever 199, which has been holding the shoe 196 in a raised position, will be actuated through the cam on the shaft 49, so as to swing around and fold in the rear top portion of the container wall, as shown in Figure 13, thus providing the flap 201 resting on the surface of the material in the container cup (see Figure 21).

As the tray having the pocket X moves along in the direction of the arrow Z, the upper part of the front wall of the container will strike against a shoe 202 rigidly mounted by an arm 203 in the bracket 192 and said end wall will thus be pressed inward onto the surface of the material, thereby forming the flap 204 shown in Figures 14 and 22. After passing from under the shoe 202, one side of the container extension will engage a shoe 206 rigidly mounted by the arm 207 on the bracket 192, so that upon movement of said tray, one extended side of said container will be pressed over onto the flaps 201 and 204 by the action of said shoe, thus forming the flap 208 (see Figures 15 and 23). The container with its one side upstanding, as shown in Figure 15 next has said side engaged by the shoe 209 on the rigidly mounted arm 211, which whips said remaining side extension over onto the flap 208, thus forming the flap 212, as shown in Figures

16 and 24. The container now being completely closed, thus enveloping the material placed therein from the hopper B, has its upper flaps rolled down so as to permanently crease the same by means of a rigidly mounted roller 213 shown in Figure 1.

Of course, it will be understood that while the mechanism in connection with the apparatus C has been described as a single unit that in fact being as many of these units as there are plungers on the cross-head 111, the number, of course, is optional, and for convenience illustrated six.

As the trays 68 pass from the apparatus C they are lowered by any suitable means into a refrigerating tank D where the semi-liquid material in the containers is solidified, and after passing through said tank, the contraction of the material will permit the trays to be reversed, and the packages to readily fall from the trays when the same are turned upside down.

By the mechanism just above described, the operation of the entire apparatus is as follows:

The trays having been fed onto the tray raising plates 138 are intermittently advanced by the movement of the lugged rail 136 actuated by the cam 145 on the shaft 49. The material which forms the containers is fed in a roll form 31 by loop forming mechanism shown in Figure 3, and actuated by the shaft 48, and such container forming material passes through the clips 36 where it is grasped by the gripping fingers 57 and 57' by the rail 86 actuated by lever and crank mechanism from the shaft 48 to depress said roll 86 against the idle roll 67, thereby separating said gripping fingers. The container material is then severed by the scissors 93 at which time said severed pieces of material are located with their central parts immediately over the openings S, G, P, M, T and W in the plates 156.

The plungers 124 then engage the central part of this severed material passing the same down through the openings S, G, etc., where such material will assume the form shown in Figure 17.

Upon the continued downward stroke of the plungers 124, the material covered plunger will pass between the side plates 157 and 158 and the bottom of the plunger will first engage the tongue 159, thereby rotating the forming plates 166 to form the flaps 169 and 172 (see Figure 18).

Continued downward movement of the plunger causes the extended flap 169 to engage the transverse forming plates 174 which places therein the folds 176 as shown in Figure 19. Still further continued downward movement of the plungers results in their striking against the tongue 177, thereby rotating the forming plates 184 which engage the extended sides 187 and press the same down to form the folds 188.

Still further continued downward movement of the plunger deposits these open topped containers in the pockets 129 of the trays 68, whereupon the plungers are returned to their original raised position by virtue of the cams 119 and 121 operating the vertical rods 112 and 113 carrying the cross-head 111 upon which these plungers are mounted. Continued movement of the trays 68 caused by the reciprocating action of the lugged rail 136 passes the open top containers beneath the hopper B where they receive a predetermined quantity of semi-liquid material through the drop nozzles 191.

The material thus being deposited in the open topped container to the required height, and the trays continuing to move intermittently along the plates 138, the container passes beneath a raised shoe 196, where during the moment of its dwell, said shoe will be actuated through a cam operating a lever 199 to bring said shoe against the rear wall of said extended container, and bend the same down onto the material in the container, thus forming the flap 201. Continued movement of the trays will cause the same to successively engage the shoes 202, 206 and 209, where the front wall and two side walls respectively are bent down forming the flaps 204, 208 and 212, as shown respectively by Figures 22, 23 and 24. The closed upper part of the container is then rolled by the rigidly mounted roll 213, so as to press against said flaps 201, 204, 208 and 212, so as to give them a permanent crease.

Of course, the apparatus and mechanisms herein illustrated and described for packaging semi-liquids may be modified and changed in various ways without departing from the invention herein set forth and hereafter claimed.

The invention is hereby claimed as follows:—

1. An apparatus for packaging semi-liquid material comprising means carrying rolls of packaging material, means for severing predetermined lengths of material therefrom, means for feeding the severed sheets of packaging material into staggered position to be simultaneously formed into receptacles, means for progressively forming the bottom and end walls of receptacles, means for sustaining said formed receptacles, means for imparting an intermittent movement to said last means, means for depositing a predetermined quantity of semi-liquid material into said receptacles, and means for folding the upper end of said receptacles to enclose the material therein.

2. An apparatus for packaging semi-liquid material comprising means carrying rolls of packaging material, means for severing predetermined lengths of material therefrom, means for feeding the severed sheets of packaging material into staggered position to be simultaneously formed into receptacles, plunger and die means for progressively forming the bottom and end walls of receptacles, means for sustaining said formed receptacles, means for imparting an intermittent movement to said last means, means for depositing a predetermined quantity of semi-liquid material into said receptacles, and means for folding the upper end of said receptacles to enclose the material therein.

3. An apparatus for packing semi-liquid material comprising mechanism for feeding and severing limited amounts of package forming material, plunger operated die means for folding said material to form open topped receptacles and for depositing said receptacles into sustaining pockets of trays, means for imparting intermittent movement to said trays to advance succeeding pockets to position beneath said folding means, means for depositing a predetermined quantity of semi-liquid material into said receptacles, means for folding the upper end of said receptacles to enclose the material therein, and means for chilling the material in said receptacles.

4. The herein described method of packaging semi-liquid materials comprising the steps of first severing from a supply a definite amount of thin pliant package forming material, then forming an open topped rectangular receptacle of said material, while moving to deposit the formed receptacle in a sustaining pocket of a movable tray, then depositing into the open topped receptacle

a predetermined quantity of material to be hardened, then folding the upper end of said receptacle, and then passing the tray through chilling means to harden the contents of said receptacle whereby the wrapped material therein will contract and discharge readily from the pocket of said tray.

5. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

6. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

7. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

8. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

9. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

10. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle and for guiding said formed receptacles into the pockets of trays, means for imparting an intermittent motion to said trays, means for filling said receptacle, and means for folding the top to enclose the material therein.

11. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle and for guiding said formed receptacles into the pockets of trays, means for imparting an intermittent motion to said trays, means for filling said receptacle, and means for folding the top to enclose the material therein.

12. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle and for guiding said formed receptacles into the pockets of trays, means for imparting an intermittent motion to said trays, means for filling said receptacle, and means for folding the top to enclose the material therein.

13. A packaging apparatus comprising a plate

having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle and for guiding said formed receptacles into the pockets of trays, means for imparting an intermittent motion to said trays, means for filling said receptacle, and means for folding the top to enclose the material therein.

14. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle and for guiding said formed receptacles into the pockets of trays, means for imparting an intermittent motion to said trays, means for filling said receptacle, and means for folding the top to enclose the material therein.

15. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, wiping dies operated by said plungers to fold the sides and bottom corners of each of said portions to form an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

16. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, wiping dies operated by said plungers to fold the sides and bottom corners of each of said portions to form an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

17. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, wiping dies operated by said plungers to fold the sides and bottom corners of each of said portions to form an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

18. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, wiping dies operated by said plungers to fold the sides and bottom corners of each of said portions to form an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

19. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, wiping dies operated by said plungers to fold the sides and bottom corners of each of said portions to form an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

20. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, snubbers to prevent an overfeed of packaging material, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

21. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its re-

spective aperture, cam operated snubbers to prevent an overfeed of packaging material, means for severing said feed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

22. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, cam operated gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, and means for folding the top to enclose the material therein.

23. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, means for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

24. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, rails having lugs thereon for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

25. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, reciprocating rails having lugs for engaging the pockets for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

26. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means carrying rolls of packaging material, gripping means for supplying sections of said material from said rolls to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, means for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

27. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means carrying rolls of packaging material, gripping means for supplying sections of said material from said rolls to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, rails having lugs thereon for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

28. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means carrying rolls of packaging material, gripping means for supplying sections of said material from said rolls to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, reciprocating rails having lugs for engaging the pockets for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, and means for folding the top thereof.

29. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

30. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

31. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

32. A packaging apparatus comprising a plate

having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

33. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, means cooperating with said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

34. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, means for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, means for folding the top thereof, and means for chilling said packages.

35. The packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, rails having lugs thereon for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, means for folding the top thereof, and means for chilling said packages.

36. A packaging apparatus comprising a plurality of plungers in staggered relation, die mechanism beneath each of said plungers, means for supplying sections of packaging material to the action of said plungers and die mechanisms to form open topped receptacles, trays having pockets for receiving said receptacles, reciprocating rails having lugs for engaging the pockets for advancing said trays to position succeeding pockets to receive said succeeding receptacles, means for filling said receptacle, means for folding the top thereof, and means for chilling said packages.

37. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, means for severing sheets therefrom, plunger means for lowering said severed sheets, die means operated by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

38. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, scissors for severing sheets therefrom, plunger means for lowering said severed sheets, die means operated by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

39. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, cam operated scissors for severing sheets therefrom, plunger means for lowering said severed sheets, die means operated by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

40. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, means for severing sheets therefrom, plunger means for lowering said severed sheets, die means having tongues extending into the path of and engaged by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

41. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, scissors for severing sheets therefrom, plunger means for lowering said severed sheets, die means having tongues extending into the path of and engaged by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

42. An apparatus for packaging semi-liquid material comprising means for rotatably supporting rolls of packaging material, cam operated scissors for severing sheets therefrom, plunger means for lowering said severed sheets, die means having tongues extending into the path

of and engaged by said plunger for folding said severed sheets into receptacle form, trays having pockets into which said receptacles are deposited by said plungers, means for intermittently moving said trays to position succeeding pockets beneath said plungers and die means, means for depositing semi-liquid material into said receptacles, and die means for folding the upper ends of said receptacles to enclose the material therein.

43. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, die means having tongues normally extending into the path of and engaged by said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

44. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, gripping members for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, die means having tongues normally extending into the path of and engaged by said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

45. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, plunger means for pressing said portions through said apertures, die means having tongues normally extending into the path of and engaged by said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

46. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, die means having tongues normally extending into the path of and engaged by said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

47. A packaging apparatus comprising a plate having a series of oblong apertures arranged longitudinally of said apparatus and offset in staggered relation, means carrying a roll of packaging material for each aperture, means for simultaneously feeding a definite quantity of said packaging material from each roll and across its respective aperture, cam operated scissor means for severing said fed quantities of material from said rolls whereby each cut portion will be centered over its respective aperture, a plurality of plungers mounted on a vertically reciprocating cross head for pressing said portions through said apertures, die means having tongues normally extending into the path of and engaged by said plungers to form each of said portions into an open topped receptacle, means for filling said receptacle, means for folding the top to enclose the material therein, and means for chilling said packages.

48. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including means for slightly raising said trays, lugged rails reciprocally mounted and adapted to be retracted during the raising of said trays and advanced to push same forward when said trays are lowered whereby successive pockets are aligned with said plunger and die means.

49. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including cam operated means for slightly raising said trays, lugged rails reciprocally mounted and adapted to be retracted during the raising of said trays and advanced to push same forward when said trays are lowered whereby successive pockets are aligned with said plunger and die means.

50. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including means for slightly raising said trays, lugged rails having cam means for reciprocating same and timed to be retracted during the raising of said trays and advanced to push same forward when said trays are lowered, whereby successive pockets are aligned with said plunger and die means.

51. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including cam operated

means for slightly raising said trays, lugged rails having cam means for reciprocating same and timed to be retracted during the raising of said trays and advanced to push same forward when said trays are lowered, whereby successive pockets are aligned with said plunger and die means.

52. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including means for slightly raising said trays, lugged rails having a cam operated sliding cross head connecting therewith and timed to retract said rail during the raising of said trays and advanced to push same forward when said trays are lowered, whereby successive pockets are aligned with said plunger and die means.

53. In an apparatus for packaging material and provided with plunger and die means for folding sheets of packaging forming material into receptacle form, means comprising trays with pockets having bottom and side walls for sustaining said formed receptacles, and means for intermittently advancing said trays including cam operated means for slightly raising said trays, lugged rails having a cam operated sliding cross head connecting therewith and timed to retract said rail during the raising of said trays and advanced to push same forward when said trays are lowered, whereby successive pockets are aligned with said plunger and die means.

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