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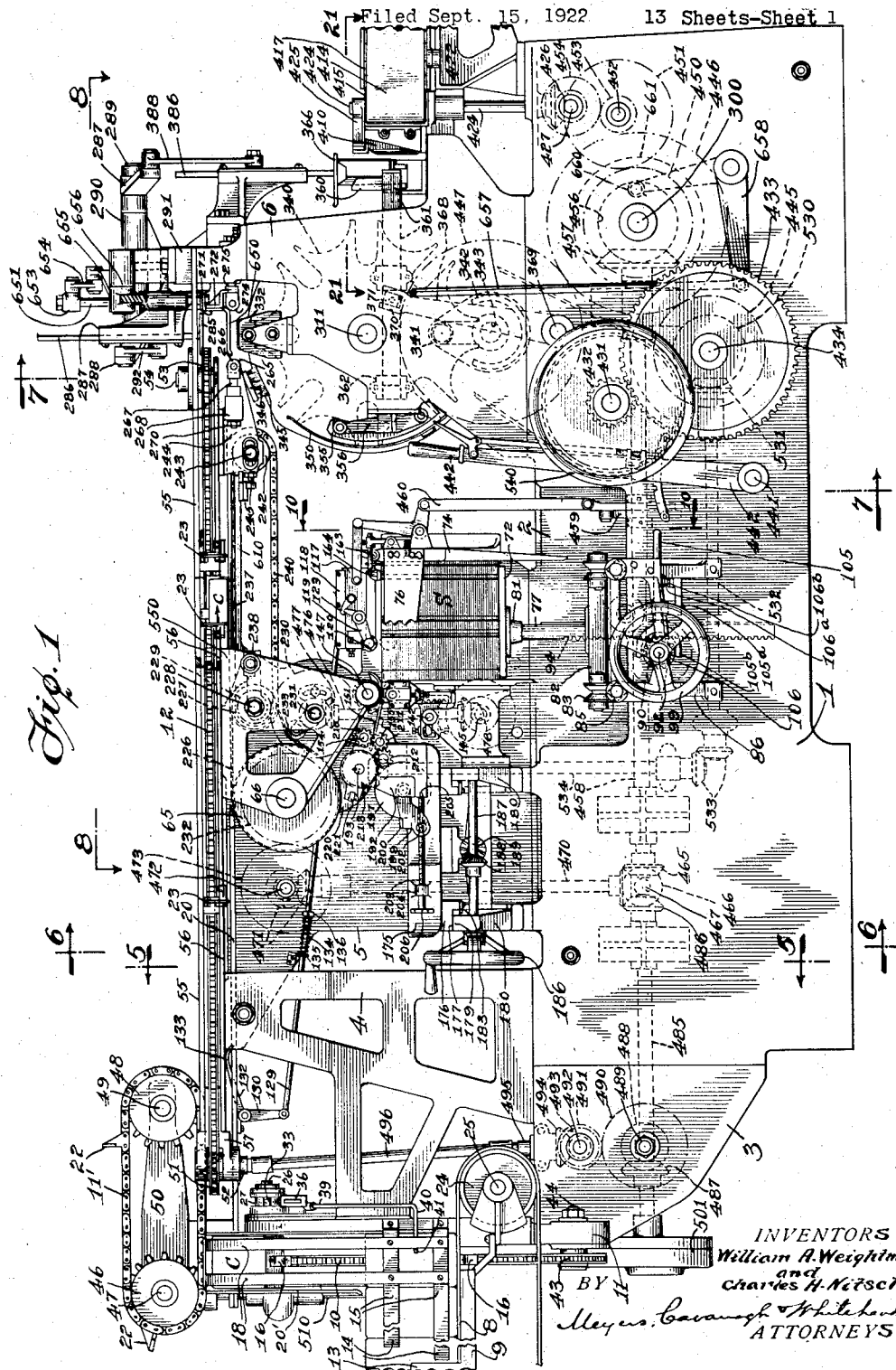
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W. A. WEIGHTMAN ET AL

WRAPPING MACHINE AND METHOD

Filed Sept. 15, 1922

13 Sheets-Sheet 1



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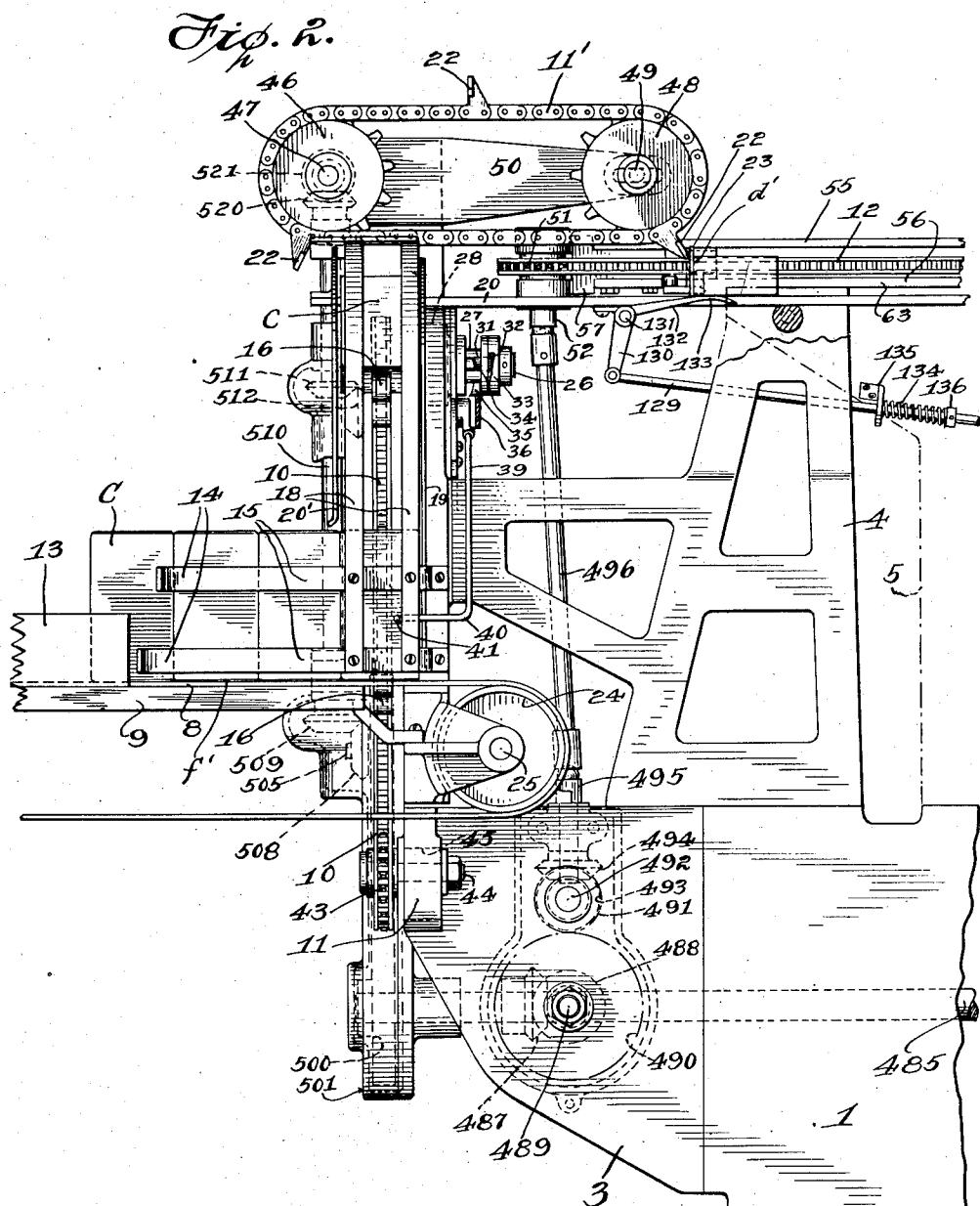
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WRAPPING MACHINE AND METHOD

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13 Sheets-Sheet 2



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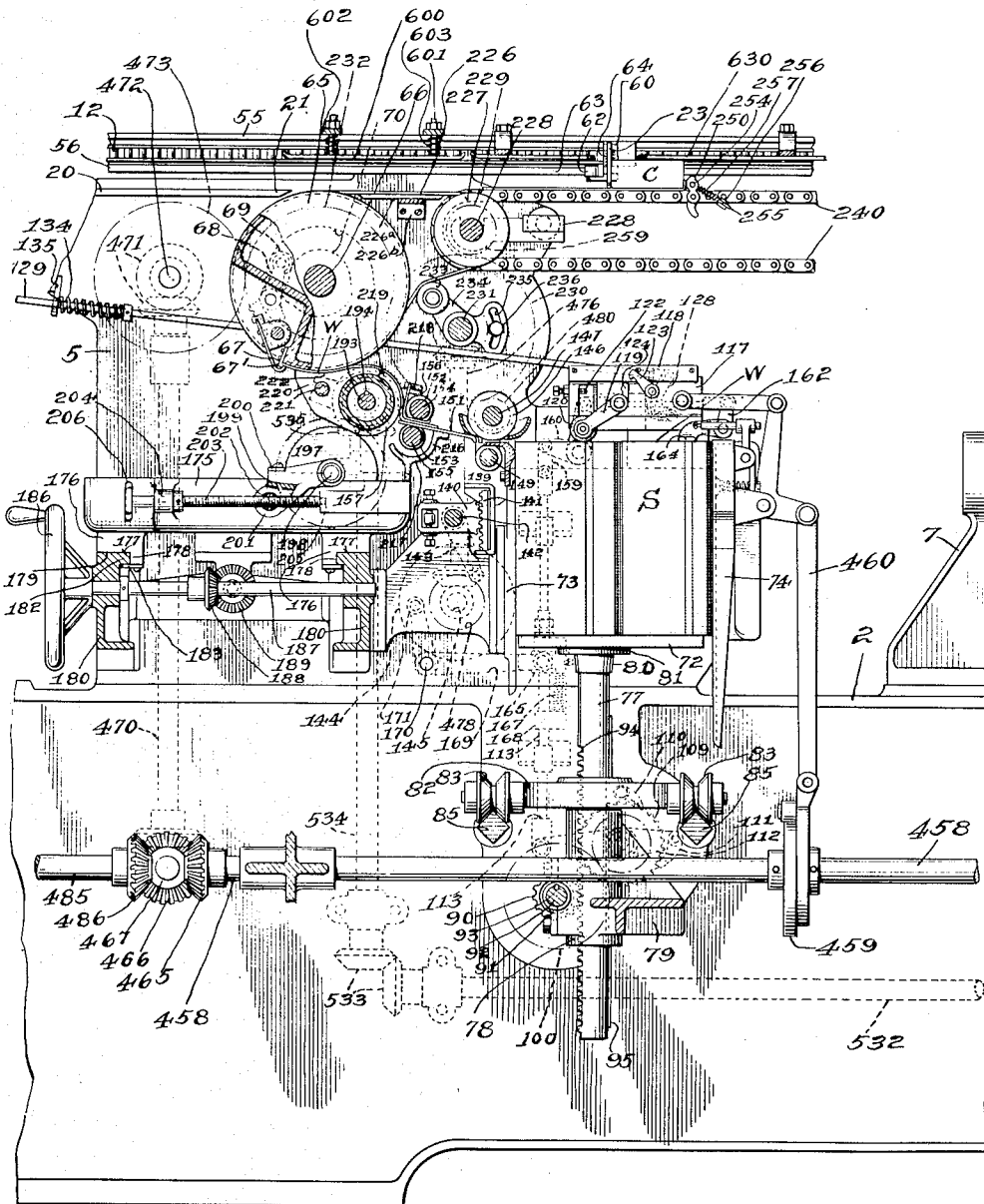
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WRAPPING MACHINE AND METHOD

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Fig. 3.



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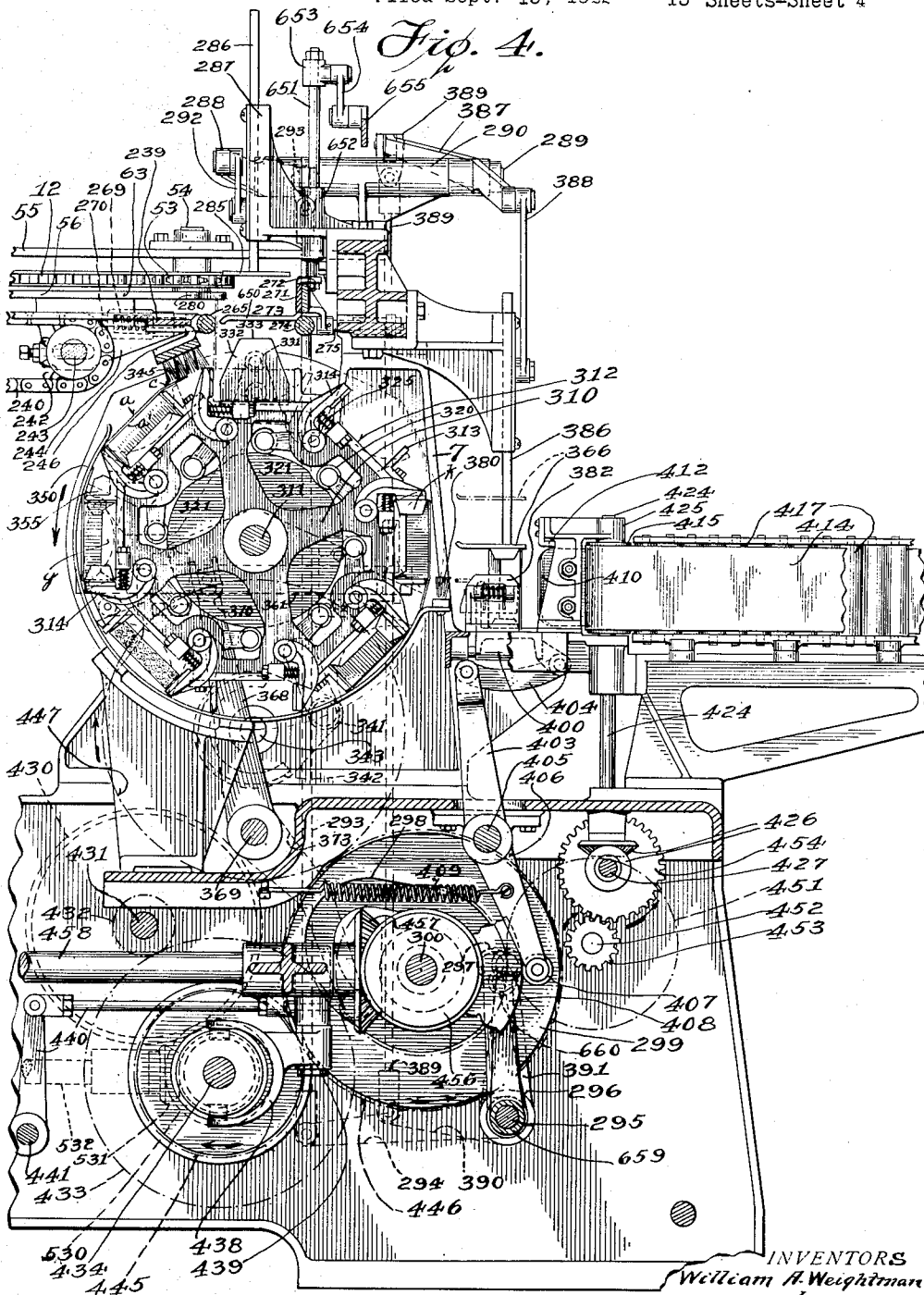
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13 Sheets-Sheet 4



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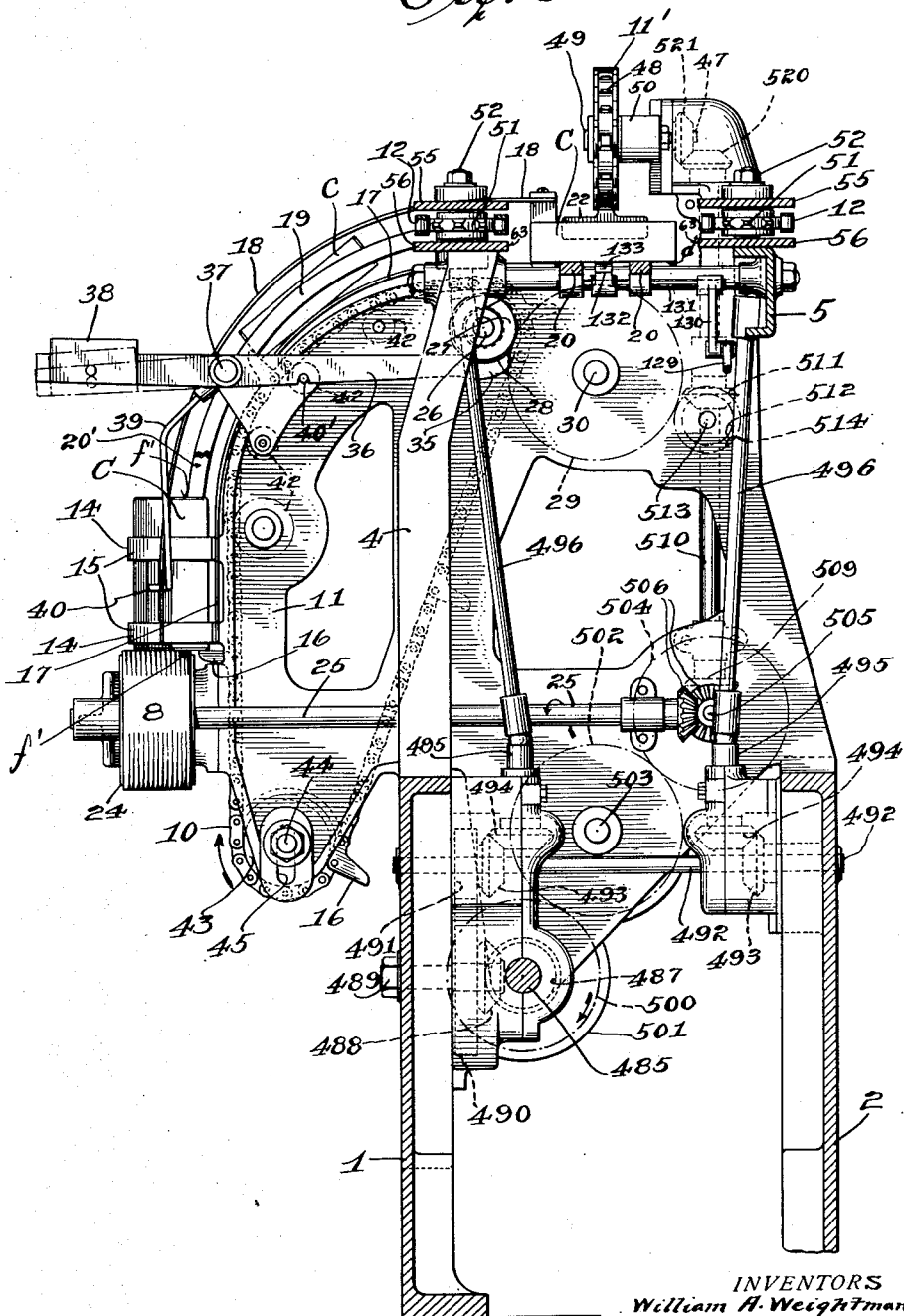
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Fig. 5.



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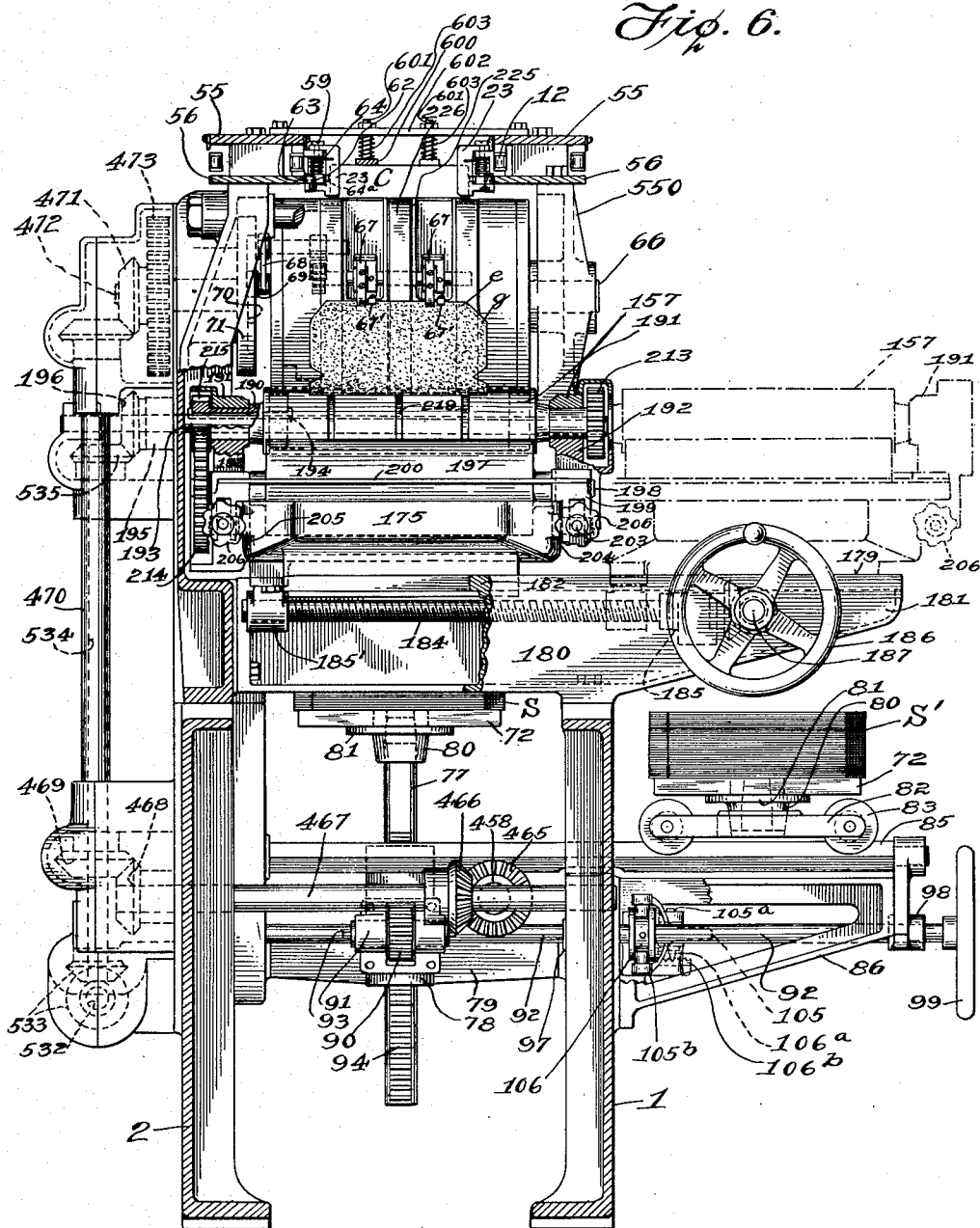
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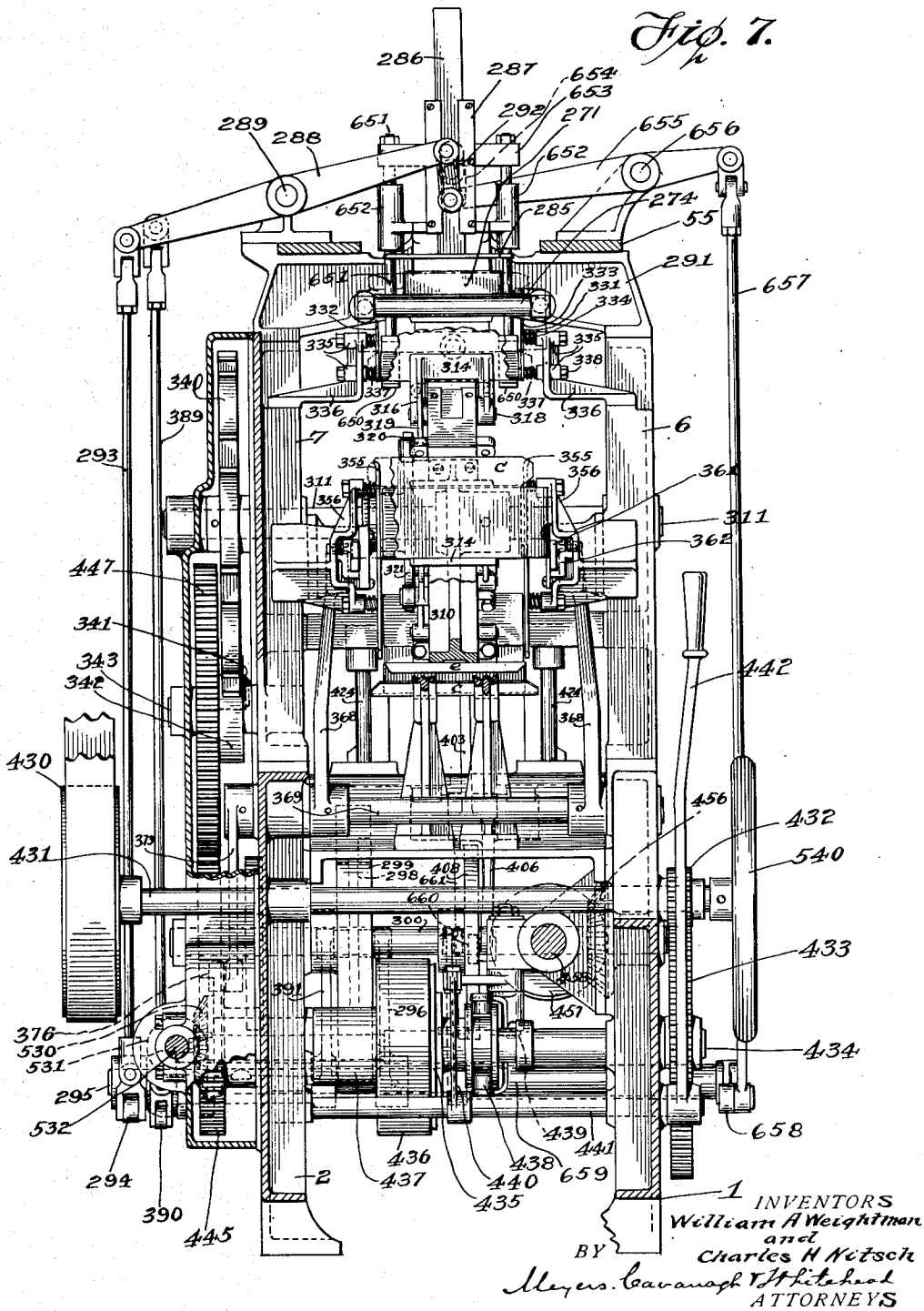
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Fig. 7.



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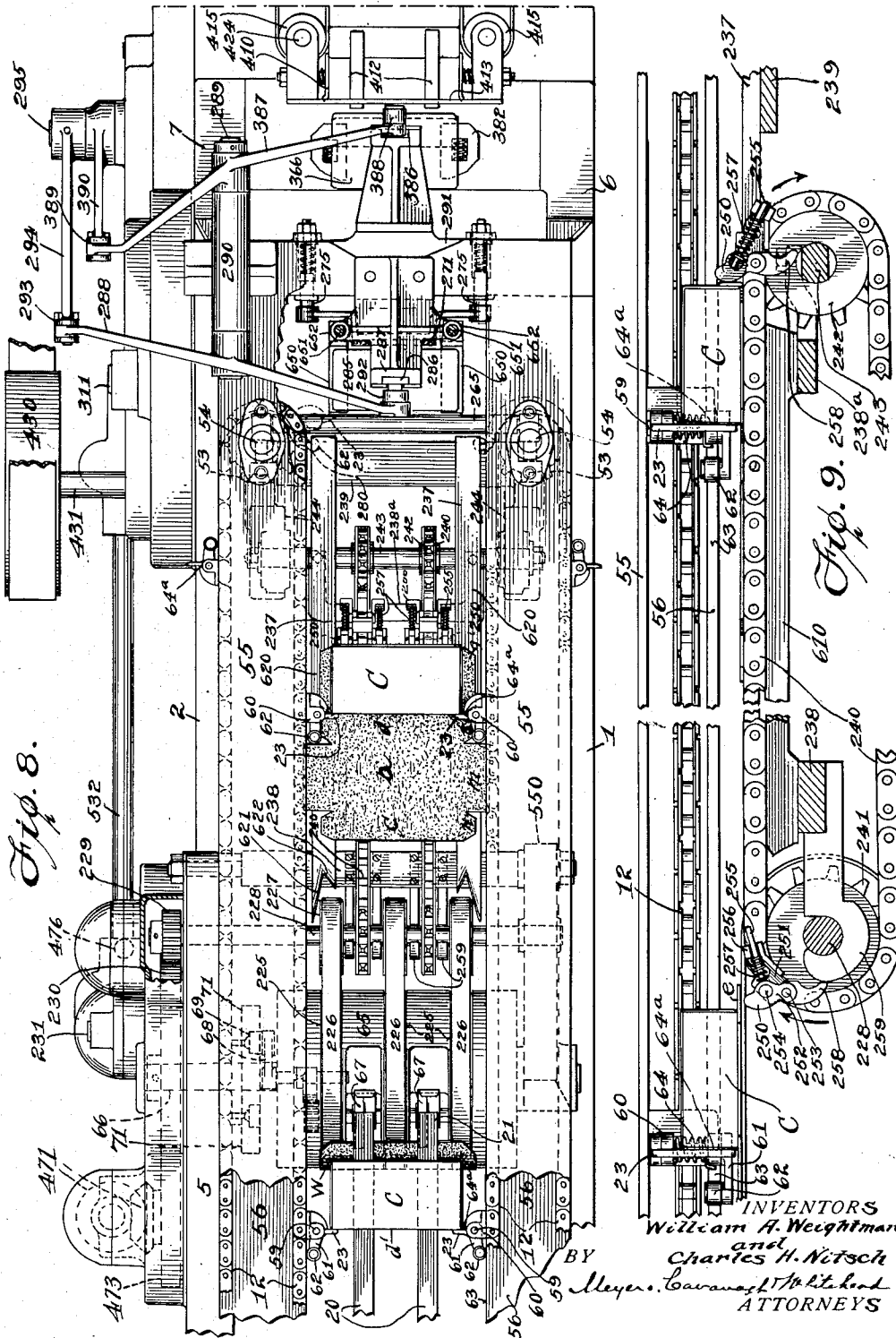
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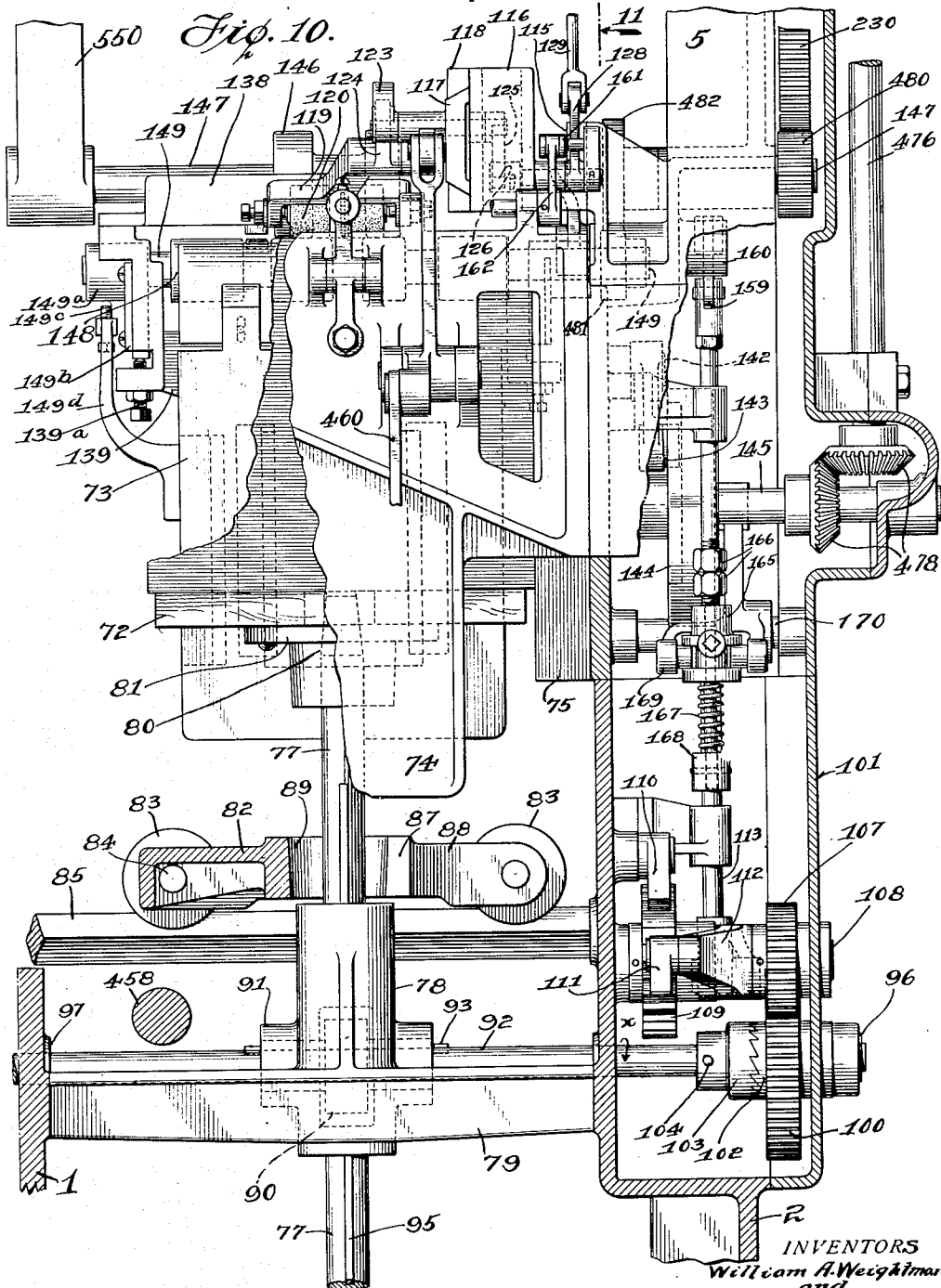
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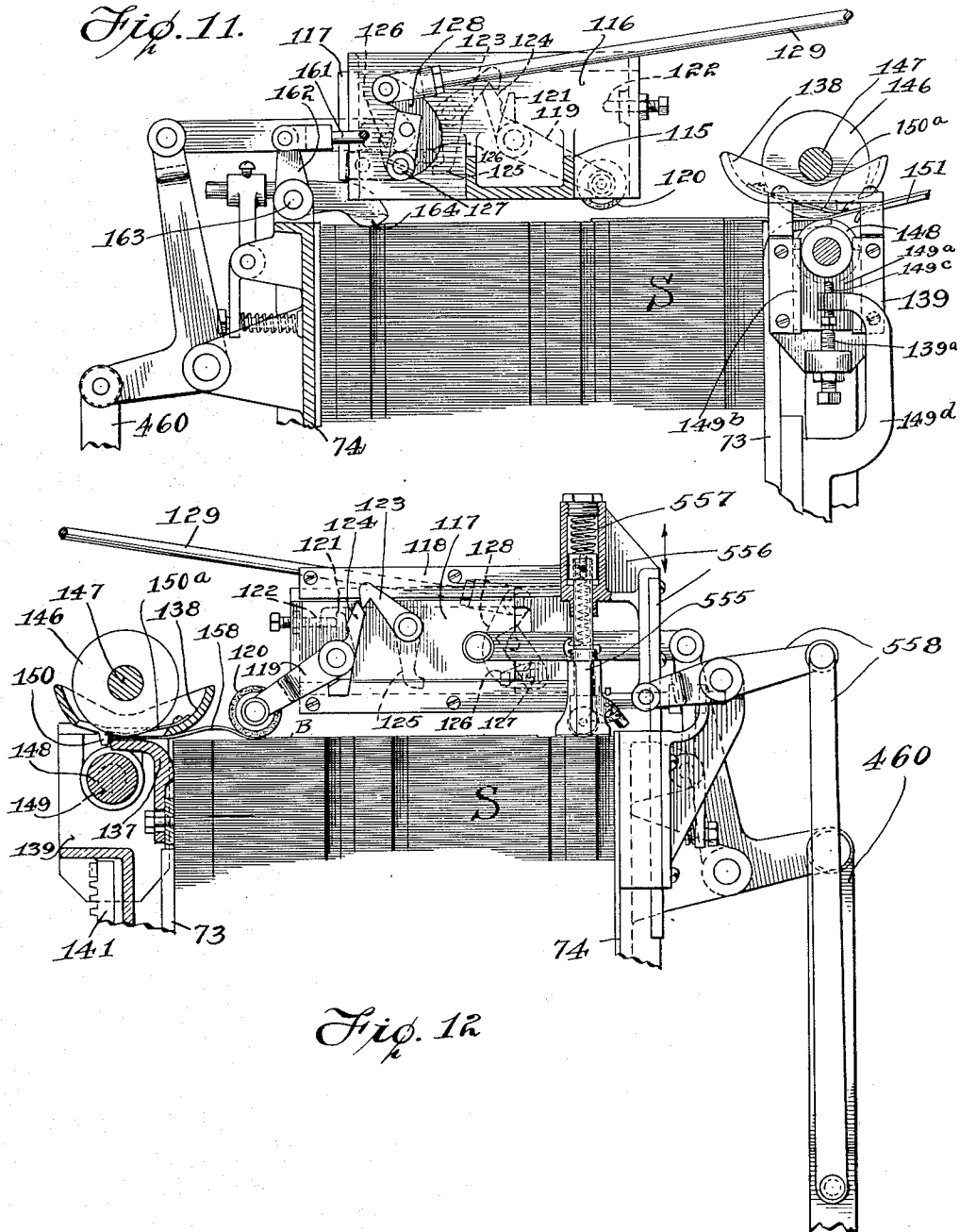
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WRAPPING MACHINE AND METHOD

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13 Sheets-Sheet 10



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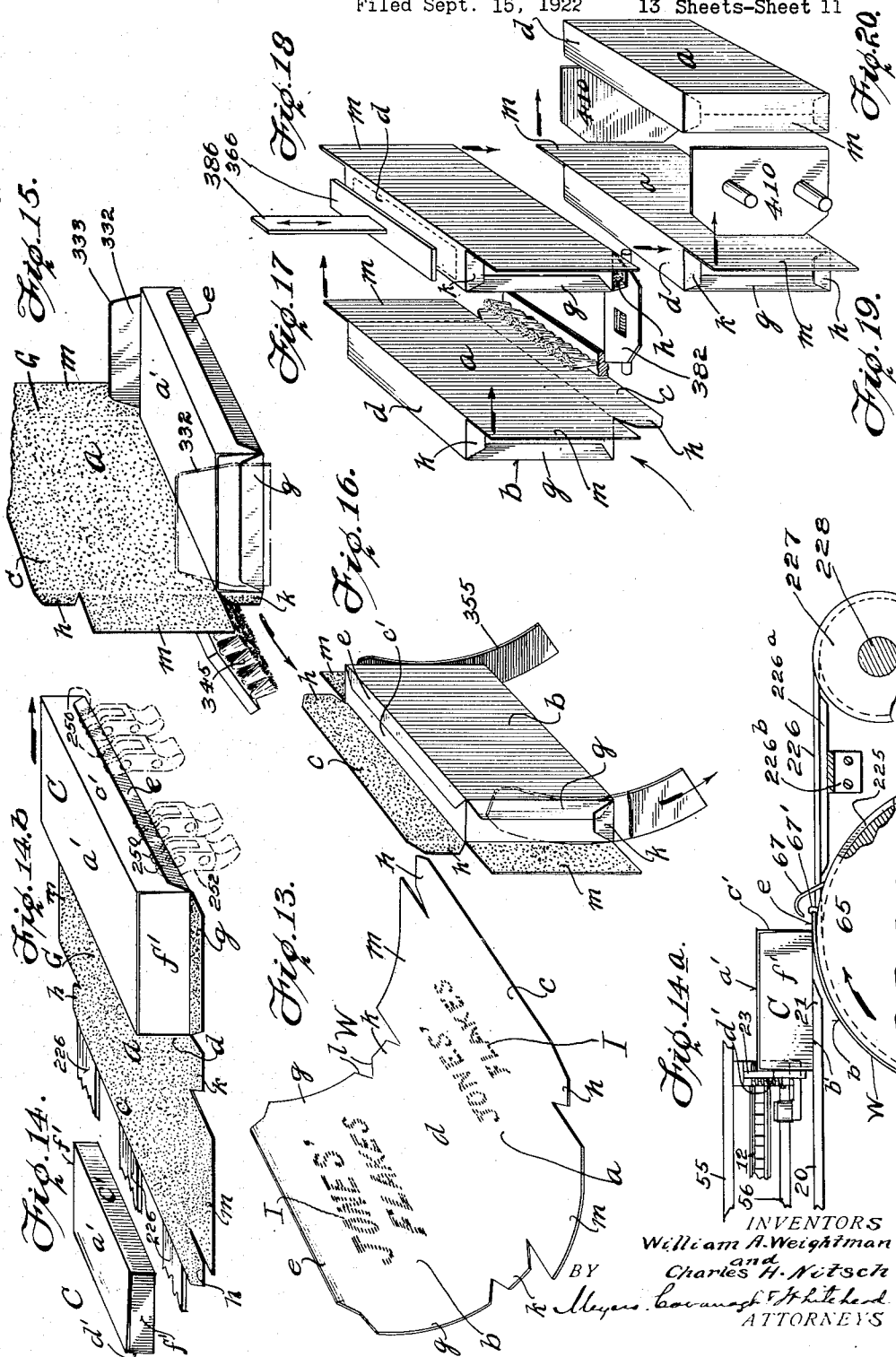
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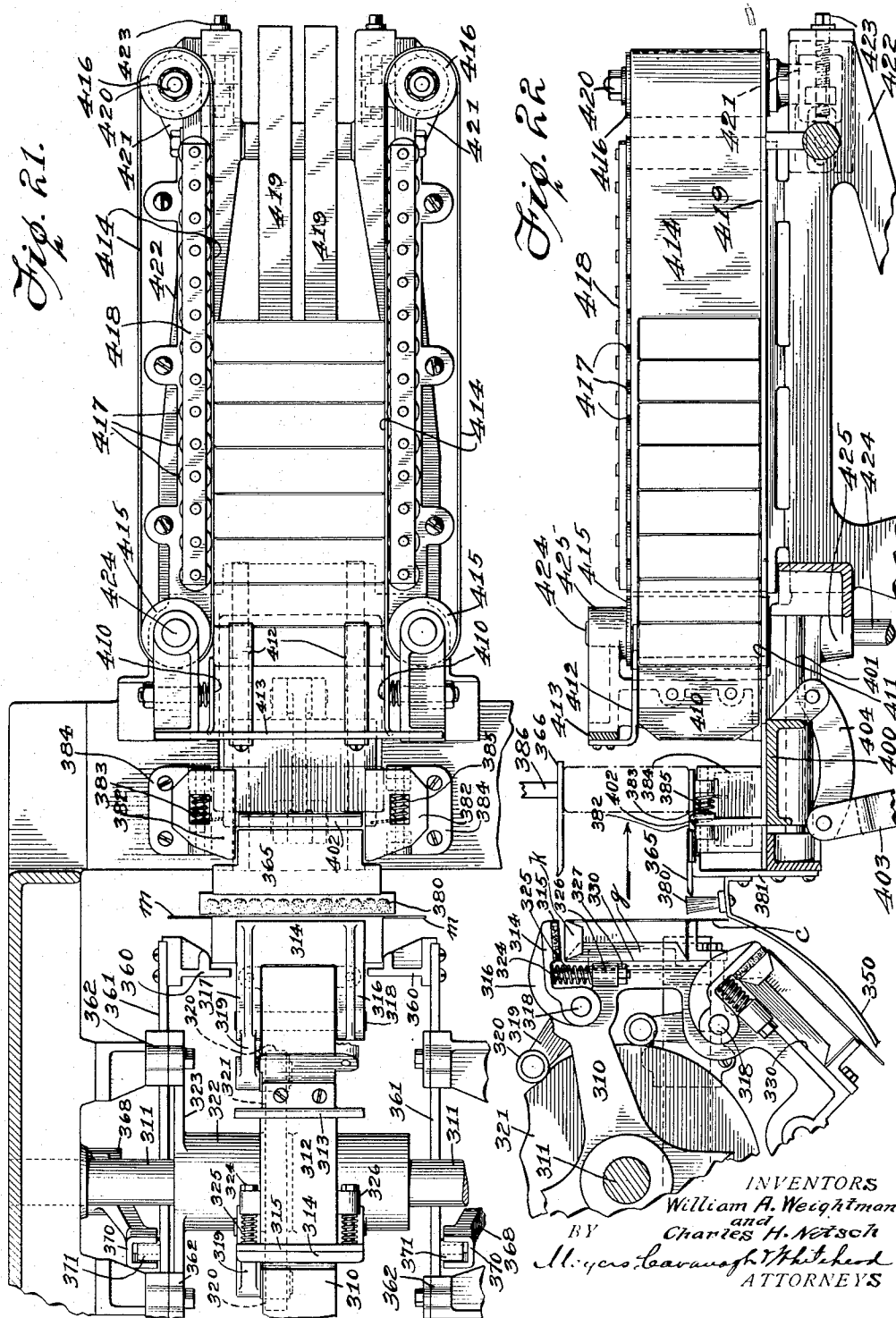
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Fig. 23.

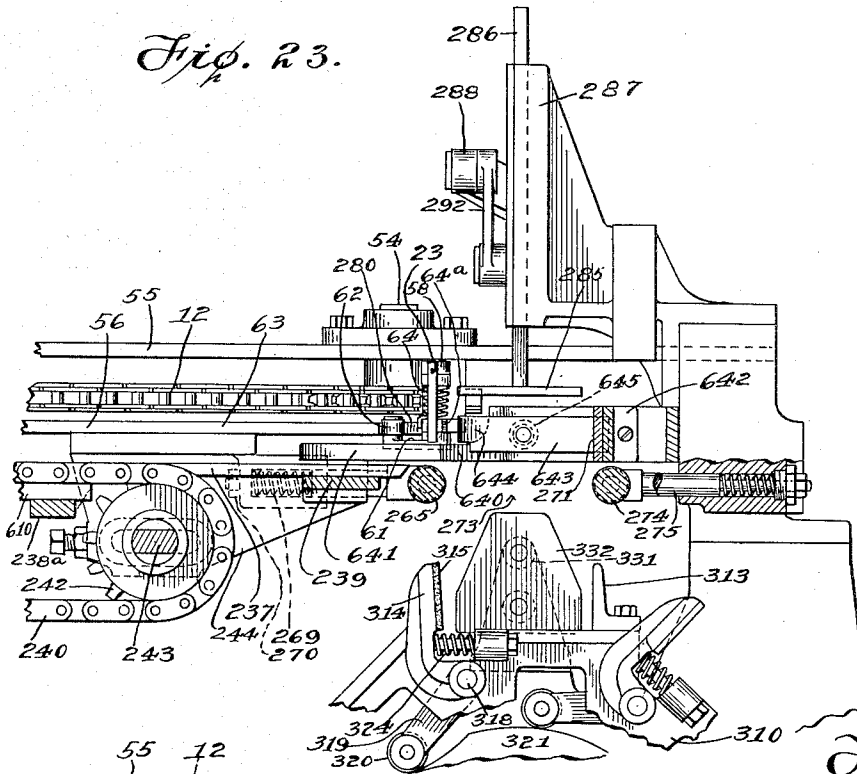
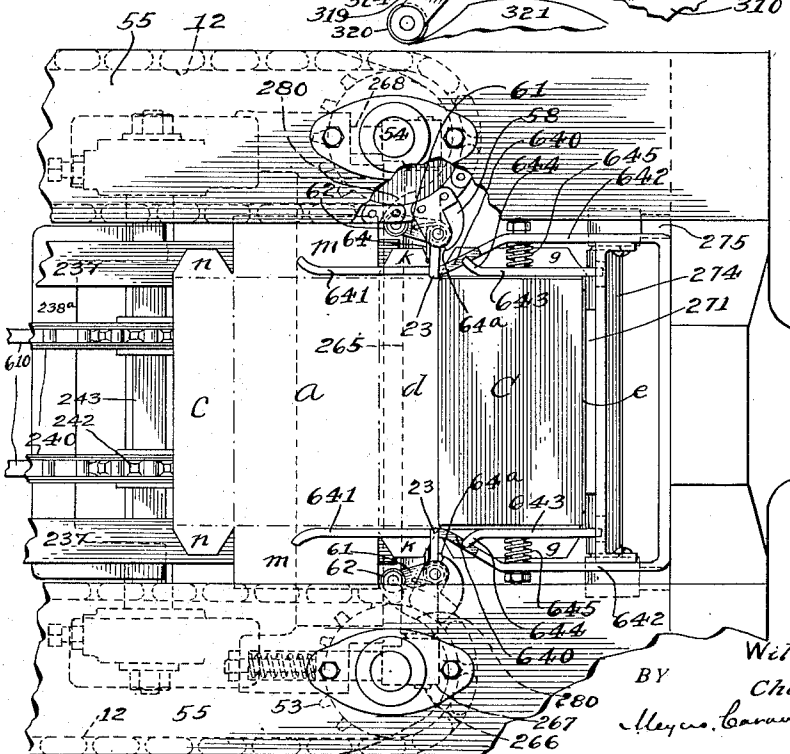


Fig. 24.



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WRAPPING MACHINE AND METHOD.

Application filed September 15, 1922. Serial No. 588,354.

This invention relates to machines for enclosing articles, such as filled cartons, in adhesively secured wrappers, and to methods of applying and securing such wrappers.

The machine is of the general class disclosed in our prior Patent No. 1,426,429, usually known as sealed wrapped packing machines, with extensive modifications and improvements.

A principal object of the invention is to provide means for bringing an article, such as a carton, and an adhesively coated wrapper, into accurately registered engagement with one face of the carton applied to a portion of the adhesive surface of the wrapper, and to secure and retain the carton and the wrapper in properly registered engagement very promptly after their initial contact and until further wrapper folding and securing operations can be performed, this object being attained in the present embodiment by the provision of means for turning up and securing to another surface of the carton a marginal portion of the wrapper which projects beyond the face of the carton as initially applied to the wrapper, very quickly after the initial contact of the carton with the wrapper surface, and for retaining the marginal portion so turned up and secured in engagement with the carton while the assembly consisting of the carton and wrapper is moved to a point where further wrapping operations are performed.

Another object is to provide improved means for supplying the cartons or other articles to be wrapped to the machine with due regard to the manner in which the cartons are conveniently arranged or supplied prior to the wrapping operation, and also with due regard to the requirements of the wrapping machine itself.

Another object is to provide improved means for conveying the cartons to and past the assembly station to the point where the principal wrapping operations are commenced and for advancing the wrappers in correctly timed or spaced relation to the movement of the cartons, bringing the wrappers and cartons into initial contact in properly registered positions and conveying the wrappers along with the cartons to the initial wrapping position.

Another object is to provide improved wrapping mechanism which folds and se-

cures successive portions of the wrapper to the carton in an advantageous way, with due regard to the manner of securing a marginal portion of the wrapper to a carton surface immediately after initial assembly, referred to above, and for retaining each part of the wrapper applied to the carton for a considerable time until the adhesive sets more or less, or until another adjacent portion of the wrapper is applied.

Another object is to provide improved wrapper supplying and feeding means in cooperation with other features of the machine and to provide improved means for quickly and easily reloading the machine with wrappers, that is for replenishing the wrapper stack.

A further object is to provide improved adhesive applying mechanism, and especially to provide a glue trough which may be easily and quickly moved to operative position, or run out to an easily accessible position for examination, cleaning of the glue trough and related parts, or replenishing the glue supply.

Another object is to provide means for stopping the carton feed mechanism, or a portion of it, when the cartons are not properly positioned at a certain point in their advance to the machine.

A further object is to provide improved means for omitting the supply of a wrapper in the absence of an article or carton which would be associated with the omitted wrapper in the normal operation of the machine.

Another object is to provide a machine adapted or readily adaptable for handling packages of different sizes and different relative dimensions and also packages of different weights.

In addition to providing instrumentalities for accomplishing the above and other objects, the invention includes various improvements in construction and arrangement of parts sufficiently explained hereafter.

As to the method, an important object is to provide suitable process steps for associating and securing the carton and wrapper in initial assembly, and for then performing the wrapping and securing operations in a desirable order and manner, fully explained hereafter.

The accompanying drawings show a ma-

chine in which the invention is embodied in one form and also sufficiently illustrate the method, and after considering the drawings in connection with the following detail description, persons skilled in the art will understand that many variations may be made within the principles of the invention, both as to the machine and method.

In the drawings:—

Fig. 1 is a side elevation of a machine embodying the invention.

Fig. 2 is an enlarged elevation from the same position as Fig. 1, of the forward portion or carton feed end of the machine.

Fig. 3 is a longitudinal section on the same scale as Fig. 2, of the central portion of the machine showing mainly the blank supporting and feeding means, gluing mechanism, blank platen and adjacent parts.

Fig. 4 is a longitudinal section of the rear portion of the machine on the same scale as Figs. 2 and 3, showing mainly the folding mechanism.

Fig. 5 is a section at 5—5, Fig. 1.

Fig. 6 is a section at 6—6, Fig. 1.

Fig. 7 is a section at 7—7, Fig. 1.

Fig. 8 is a top plan of the central and rear portions of the machine.

Fig. 9 is an enlarged detail in vertical section showing mainly mechanism for advancing the carton and wrapper in assembled relation and for turning up and securing a projecting marginal portion of the wrapper.

Fig. 10 is a section at 10—10, Fig. 1.

Fig. 11 is a section at 11—11, Fig. 10, showing blank feed mechanism.

Fig. 12 is a view from the opposite side of the same mechanism.

Figs. 13 to 20, inclusive, show the wrapper and carton in successive stages of manipulation in accordance with the operations of the machine and also illustrate one performance of the method.

Fig. 21 is an enlarged view of the rearward portion of the machine in horizontal section, substantially in the plane 21—21, Fig. 1.

Fig. 22 is a longitudinal vertical section of parts shown in Fig. 21.

Fig. 23 is a vertical, longitudinal section at the rear end of the machine showing mainly package guiding and supporting devices at the upper end of the vertical folding channel.

Fig. 24 is a plan view of the same.

The objects to be wrapped may vary greatly in character, but usually they are cartons containing various commodities, and one typical carton C is illustrated in the drawings. The shape, proportions and dimensions of the cartons may vary greatly. The one chosen as an example (see Fig. 14^a), has broad sides *a'* and *b'*, narrow sides *c'* and *d'* and ends *f'*. The wrappers are

cut with due regard to the particular carton. For the described carton a typical wrapper W, in the present case (Fig. 13), consists of a sheet of paper of suitable quality and thickness and comprises main or body portions *a, b, c, d*, to cover respectively the sides *a', b', c', d'* of the carton and a marginal portion or strip *e* at one end of the blank, projecting from the side of blank section *b* to be secured on a marginal portion of carton side *c'*. The blank is also provided along its sides with flaps to cover the ends *f'* of the carton, and the shape and arrangement of these flaps may vary considerably. In the present instance flaps *g* extend from the blank section *b*, flaps *h* extend from section *c*, and flaps *k* extend from section *d*, all these flaps being relatively narrow in the transverse direction of the blank and having their corners cut away to provide angular end edges as at *l*. Flaps *m* extend from the ends of blank section *a*, and these flaps are in the present instance of a size and shape commensurate with the ends *f'* of the carton, so that, these flaps being turned down and secured over the other end flaps, the ends of the carton in the complete package are covered by smooth and unbroken blank sections, the full size of the carton ends. The wrappers are usually printed on their outer surfaces with suitable indicia I, Fig. 13.

According to the improved method of wrapping forming part of this invention, and as described, especially with reference to the mode of operation of the machine forming a part of the invention, individual wrappers W are separated from a group or stack and coated with an adhesive such as glue G, usually applied over the entire inner surface of the blank and then the blank is brought into initial or assembly contact with a carton C, as shown in Fig. 14^b, and specifically in the present particular performance of the method, the carton side *b'* is brought in contact with the adhesively coated surface of the wrapper section *b*, with particular attention to the exact location or registration of the carton upon the blank, so that subsequent wrapping operations may be correctly performed. Substantially concurrently with this contact or assembly, or very quickly thereafter, the blank marginal strip *e* is folded up and pressed upon a marginal portion of the carton side *c'*. This operation by producing an angle or corner in the blank and an overlap of the margin strip *e* upon a face *c'* of the carton at a right angle to the face *b'* to which the blank section *b* is fixed, with adhesive contact of the strip *e*, very materially assists in securing the carton and wrapper blank in proper relative positions, or registered assembly, or otherwise stated it prevents any relative slipping of the blank and

carton before further wrapping operations can be performed. The assembly consisting of the blank and carton is then further manipulated to complete the enclosure of the carton in the wrapper, and according to the preferred operation of the machine, prior to further wrapping operations the assembly is transferred a certain distance from the point of initial assembly to the point where the principal wrapping operations are commenced and the turning up and securing of the margin strip *e* may be accomplished during an early part of this transfer movement. The principal wrapping operations are performed in the present instance in a particular order, although in the broader aspect of the invention, the order of folding and securing different parts of the wrapper may vary considerably. According to the present specific performance of the method, the blank section *d* is folded up and pressed against carton side *d'* and substantially concurrently the flaps *g* are turned up and pressed against marginal portions of carton ends *f'*, Fig. 15. Blank section *a* is then pressed against carton side *a'* and substantially concurrently, or shortly thereafter, flaps *h* are pressed on the carton ends with a slight overlap upon adjacent end portions of the flaps *g*, Fig. 16. Blank section *c* is then folded and pressed upon carton side *c'* and over the previously affixed margin strip *e*, Fig. 18. Flaps *h* are then turned up and secured with a slight overlap upon adjacent end portions of flaps *g*, Fig. 19, and finally the rectangular end flaps *m* are folded over and pressed upon the ends of the cartons, Fig. 20, entirely covering the previously affixed margin flaps *g*, *h* and *k*. The package is then completed, and as soon as the adhesive hardens, is in proper condition for packing and forwarding to the consumer.

To adapt the method for machine operations the assembly is desirably moved and positioned in a particular manner, and Figs. 14 to 20, inclusive, show the general method of forwarding and positioning the assembly to suit the method to the operation of the particular embodiment of the machine herein disclosed. For instance, in Fig. 13 the blank has been adhesively conditioned on its inner face and is being advanced in an arcuate path to a point where initial assembly is accomplished, as in Fig. 14, and at or just beyond that point the blank is straightened out and a long portion of it trails behind the carton as the assembly is advanced toward the right. From the position shown in Fig. 15 the assembly is moved downward, while blank section *d* and flaps *g* are folded and secured and the assembly is then moved in an arcuate path, as indicated by the arrow, to the position shown in Fig. 16, and during this movement the

blank section *a* is turned up and secured and in the further arcuate movement away from the position, as Fig. 16, as indicated by the arrow, the flaps *k* are turned up and secured. The assembly then arrives in the position shown in Fig. 17, with the affixed blank section *d* uppermost and it is then moved to the right as indicated by arrows and during this movement the blank section *c* is folded and secured before or as the assembly arrived at the position of Fig. 18. The assembly is then moved downward as indicated by arrows and during this movement the flaps *h* are folded and secured, the assembly arriving at the position of Fig. 19. It is then moved to the right, as indicated by arrows, and during this movement the large end flaps *m* are folded and secured, producing the completed package, Fig. 20. Certain of the folding and pressing instrumentalities are indicated in these figures in an elementary or diagrammatic way, these devices being explained in the following description of the machine.

The frame of the machine comprises side base members 1 and 2, having forward extensions 3 and uprights 4, 5 and 6, the frame side members and uprights being connected by suitable cross-pieces, the details of which are unimportant, except as mentioned hereafter.

The cartons *C* are brought up to the front or article feed end of the machine, at the left, Figs. 1 and 2, by a supply conveyor consisting of a belt 8, the upper stretch of which runs over a table 9 and is located at a convenient height to receive the filled cartons from filling machines or to permit the cartons to be placed on the belt by hand. The cartons are removed from the supply conveyor by an elevating conveyor consisting of a chain 10, the ascending active stretch of which passes over a curved guideway on a frame member 11. The cartons stand on one of their ends *f'* on the supply conveyor 8, in line with one of the narrow sides, such as *c'* foremost, and are moved by the elevating conveyor 10 with the upper ends *f'* foremost until at the point of discharge from the elevating conveyor the cartons lie horizontally on one of their broad sides *d'* with one of the narrow sides *c'* in advance in the direction of carton movement toward the rear of the machine. The cartons are then moved by an intermediate or transfer conveyor consisting of a chain 11' to a point between the forward ends of the two main horizontal carton feed and assembly transfer conveyors consisting of chains 12, between the active inward, rearwardly moving stretches of which the cartons are carried to and past the assembly station and on to the initial folding position.

The supply conveyor 8 may be of any convenient length and up to a point near the

machine the row of cartons is centered on the belt by vertical guide plates 13. Adjacent to the machine the packages are diverted laterally by guide strips 14 having curved portions 15 so that the end carton in the row, as best shown in Fig. 5 is offset laterally from the supply belt. Its lower end f' is then engaged by one of a series of equally spaced cleats 16 on elevating conveyor 10, and the carton is carried up through a guide channel consisting of curved strips 17, 18, 19 and 20, the curvature of the channel thus formed, conforming to the curvature of the ascending stretch of the elevating conveyor. As the packages reach the upward horizontal position they slide over the strips 17 until they are located on the forward ends of a longitudinal slideway, consisting of strips 20, supported by suitable frame uprights and cross members, which terminate at 21, Figs. 3 and 8, at a point nearly above the axis of the blank platen. Shortly after the carton is positioned over the forward ends of strips 20, it is engaged by one of the equally spaced pusher cleats 22 on intermediate conveyor 11' and advanced over the slideway until it comes between the inner stretches of main conveyor chains 12 and then the face d' of the carton is engaged near its ends by two of the pusher blades 23, these being located in similarly spaced relation on each of the main conveyor chains 12, and by these pushers the carton is advanced to and beyond the assembly station.

The end of the supply conveyor 8 adjacent to the machine runs over a pulley 24 on a transverse shaft 25, driven at a suitable speed by connections later described. The elevating conveyor chain 10 passes over a drive sprocket on a shaft 26 and the shaft is releasably driven by a dog clutch from a sleeve 27 rotatably mounted on the shaft. The sleeve is continuously driven by a pinion 28 secured on it, engaging an idler gear 29 on a shaft 30, this idler gear being driven in a manner hereafter described. The dog clutch just mentioned comprises a longitudinally slidable dog 31 having its outer end arranged to engage with a notch 32 in a disk 33 secured to shaft 26. The dog is urged to engage the notch by a spring, not shown, and it has a diagonal face 34 arranged to be engaged by an arc-shaped edge portion 35 of a lever 36 fulcrumed at 37 and normally urged by a counter-weight 38 to operative relation with the dog face 34. The lever has an arm 39 suitably bent and extending downward to a point where it is provided with a horizontal extension 40 having an outwardly curved end 41, this portion of the lever constituting substantially a cam acted upon by the foremost advancing carton on conveyor 8. Normally the advancing carton acts on arm member 40 and moves

the lever to inactive position against a stop pin 40'. The clutch dog 31 then remains in engagement with the notch 32 and conveyor 10 is continuously driven so long as packages are properly presented in front of its ascending cleats 16. If a carton is not properly pushed into position for vertical feeding, however, the lever arm member 40 is not acted on by the carton, and counter-weight 38 rocks the lever and brings its arc-shaped edge 35 into active relation with the beveled dog face 34, and as the dog approaches the lever edge it is retracted from notch 32 and conveyor 10 then remains stationary until a carton is again presented at the proper position for lifting, whereupon the lever is retracted and the drive of the elevating conveyor is resumed. In this way the elevator blades 16 are prevented from striking an improperly positioned carton, tilting it, and jamming it in the guide-ways, or breaking the carton.

Conveyor chain 10 also passes over suitable idler sprockets or rollers 42 to assist in guiding its curved portion and a lower idler sprocket 43 having its shaft 44 mounted in slots 45 in the frame to take up slack in the chain.

The intermediate or transfer conveyor chain 11' passes over a drive sprocket 46 on a shaft 47 and an idler sprocket 48 on a shaft 49 adjustably located in slots in frame arms 50 to take up chain slack. The driving of shaft 47 is hereafter explained. The forward portion of each of the main conveyor chains 12 passes about a driving sprocket 51 carried by short vertical shafts 52, driven as hereafter described. The rear bends of these conveyor chains pass about idler sprockets 53 on short vertical shafts 54. Each chain 12 is located below a flat longitudinal frame strip 55, and another similar strip 56 is located below each chain and suitably connected and spaced away from strip 55, the lower strip 56 forming a support for the chain throughout its travel. The forward ends of each strip 55 and its underlying strip 56 are secured to a block 57 slotted to accommodate the corresponding sprocket 51 and bearings for the sprocket shaft 52 are provided in the ends of the clevises.

Each of the carton pusher blades 23 of the main conveyors (as best shown in Figs. 6, 8, 9 and 14^a), is provided with lugs 58, by which the blade is pivoted on a pin 59 in ears 60, forming parts of a fitting secured to the chain 12. Each blade has an arm 61 carrying a roller 62 traveling on the inward edge 63 of the corresponding frame strip 56, this edge forming a track to control the position of the pusher blade. A spring 64 is coiled about each of the pins 59 and is arranged to normally hold the blade against a stop at 64^a on the chain fitting. That is, the springs urge the blades forward in the

direction of movement of the conveyor chains and against the stops. The rollers 62 traveling on the track faces 63 positively hold the pusher blades in the stated position during their advance in engagement with the cartons until the carton with its assembled wrapper is delivered above the vertical folding channel, when the rollers 62 encounter depressions in the track surface and the springs cause the blades to exert yielding pressure on the cartons to properly position them until the blades are withdrawn laterally by movement of the chains around the rear sprockets 53, as more fully explained hereafter.

Located below the line of travel of the carton with its upward periphery in line with the upward surface of the carton slideway 20 is the wrapper blank platen 65, carried by a shaft 66 and provided with blank grippers 67 operated by a rock arm 68 having a cam roller 69 engaging in a cam track 70 of a stationary cam body 71, this mechanism operating so that the grippers are open to receive the blank when at a point substantially below the shaft 66 and then close to grip the blank and carry it around to a point above the platen where it is associated with a carton, as later more particularly described, and the grippers are then opened to release the blank. Adjacent to the grippers the platen carries blank stops 67' to locate and align the advance edge of the blank properly on the platen prior to engagement by the grippers.

Below and somewhat to the rear of the platen a stack S of the wrapper blanks W is supported on a base or plate 72, the blanks when printed having their printed sides upward. The stack is guided by front and rear upright boards or plates 73 and 74, respectively, and by an upright side board or plate 75 at the left side of the stack, as viewed from the front of the machine, or the side away from the observer in Figs. 1 and 3, and also by a relatively narrow side-board or plate 76 at the right hand side or the rear side as viewed in Fig. 1, this guide piece being omitted in Fig. 3. The various vertical guides for the stack are carried by suitable framing, the details of which may vary greatly, this framing being supported by a frame side-member 5, the main framing of the machine being arranged so that the stack is practically unobstructed from the right hand or rear side of the machine, as clearly shown in Fig. 1, and so that the stack may be withdrawn laterally toward the observer in Fig. 1 or Fig. 3, when the top of the stack is below the lower edge of the right hand guide plate 76. Provision is made for raising and lowering the stack, both to permit its proper adjustment at the beginning of sheet feed operations and more especially to permit

easy and rapid reloading of the machine, that is to say replenishing the stack of blanks, by mounting the base 72 removably upon a plunger 77 arranged to slide vertically in a sleeve 78 located on a cross frame member 79. The upper end of the plunger 77 fits in a suitable socket 80 in a plate 81 secured to the stack base 72. A stack transferring or reloading carriage 82 is provided with four double beveled wheels 83 mounted on short shafts 84, and these wheels run on two square rails 85 having their inward ends located in frame member 2 and their outer ends secured in a frame extension 86, Fig. 6, these rails being arranged with one edge upward to engage in the grooves of the wheels 83. At the inner side the carriage is provided with an opening as at 87, so that two of the wheels 83 are carried by separated portions or arms 88 of the carriage, and the central portion of the carriage is formed with a socket 89, with which the opening 87 communicates, this socket being formed to receive the tapered socket 80 of base 72. When the plunger is lowered with the carriage in inward position, that is below the operative stack position, Fig. 10, the base socket 80 enters the carriage socket 89 and base 72 is then supported on the carriage and when the plunger is lowered further sufficiently to clear the socket 80, the carriage is easily run out on rails 85 to a position shown in Fig. 6, where it is readily accessible to receive another stack S' of blanks, and the carriage is then run in again, the plunger raised into engagement with the base and the base is elevated, carrying the stack up between the front and rear and side guide plates until the top blank is in proper feed position, as shown in Fig. 3. For quick reloading the bases 72 may be provided in duplicate and when the stack in operative position is nearly exhausted the plunger is quickly lowered until it is free from the base 72 and the base with any remaining blanks may be quickly removed from the plunger. In the meantime the carriage may be in outer position as in Fig. 6, and a fresh stack of blanks S' located on it and the carriage is then run in quickly and the plunger raised to bring the new stack in position, with only a very brief delay in the operation of the machine.

The plunger is raised and lowered in the present embodiment of the invention by a pinion 90 located in a slot or clevis formed in a sleeve 91 formed as a part of sleeve 78 and the pinion is mounted on a shaft 92 which is free to slide through the sleeve 91 and through the pinion while the pinion is prevented from axial movement by the sleeve, and the pinion is also secured to rotate with the shaft by means of a key or spline 93. The pinion engages a rack 94 cut on plunger 77, and the plunger is pre-

vented from turning in its sleeve 78 by a spline or key 95. Shaft 92 is mounted rotatably and slidably in suitable bearings 96, 97 and 98, and at its outward end carries a hand wheel 99. A gear 100 is rev-
 5 lubly mounted on shaft 92 in a gear casing 101 formed in frame member 2, and this gear is normally connected to the shaft by clutch teeth 102 on its hub engaging the
 10 teeth of a clutch member 103, secured on the shaft by a pin 104. Gear 100 engages a pinion 107 on a short shaft 108 and this shaft also carries a circular ratchet 109 engaged by a retaining pawl 110 and also by
 15 a driving pawl 111 which is carried on a lever 112 fulcrumed about the axis of shaft 108 and oscillated by a rod 113 which is moved down and up in each cycle of the machine to automatically elevate the stack
 20 from time to time to compensate for the removal of the blanks therefrom. Whenever the lever 112 is oscillated far enough for its pawl to drive the circular ratchet 109 one tooth space the ratchet is so driven and is re-
 25 tained by the holding pawl 110, and this movement of the ratchet is communicated by pinion 107 and gear 100 through the clutch members 102 and 103 to shaft 92, which is thus turned a small part of a rev-
 30 olution sufficiently to cause pinion 90 to raise plunger 77 and the stack a short distance and readjust the top of the stack as required for the blank feed. To conveniently move shaft 92 endwise a shifter lever
 35 105 is provided (Figs. 1 and 6) fulcrumed at 105^a and having a fork 105^b, engaging a shifting collar 106 on the shaft. The lever also has a spring pressed plunger 106^a engaging a notched sector 106^b to retain the
 40 shaft and its clutch member 103 in engaged or disengaged position.

To raise or lower the stack for reloading or for any other reason, the lever 105 is moved to shift the shaft 92 endwise and re-
 45 lease the clutch member 103 from the clutch teeth 102 and then by rotating the hand wheel the stack base is quickly raised or lowered and the clutch is then connected by moving the lever 105.

50 In a separate application, Serial No. 566,094, filed June 5, 1922, we have disclosed stack supporting, guiding and elevating means similar to those disclosed in the present application, and such mechanism is
 55 shown in association with sufficient parts of a wrapping machine substantially the same as the present mechanism to enable the co-operation of the sheet feed mechanism with other parts of the machine to be understood;
 60 and said application also shows certain features of gluing mechanism employed in the present invention. Such sheet feed mechanism, with certain modifications and im-
 65 provements, will now be briefly described, with full explanation of such features as are

not fully described and claimed in said separate application, and the gluing mechanism will also be described with particular explanation of its features not fully described or claimed in said separate application; and
 70 as to any features of the sheet feed and gluing mechanism not fully described hereafter, reference should be made to the above identified application.

At the top of the stack S a suitable frame
 75 member 115 supports a plate 116 over the inward face of which a slide 117 moves in guides 118. The slide carries a pivoted arm 119 on the end of which is a pusher roll 120. Connected to arm 119 is a lug 121 which
 80 strikes an adjustable stop 122 near the end of the slide feed motion and elevates the pusher roll which is held in elevated position by a latch 123 engaging a lug 124 con-
 85 nected to arm 119. Near the end of the slide return movement the end of a lug 125 connected to latch 123 strikes a stop 126 pivoted at 127 and provided with an arm
 90 128 connected to a link 129 by which the stop 126 is positioned in or out of the path of the end of the lug 125. Normally with the stop in active position, every time the slide retreats the end of lug 125 engages
 95 the stop and latch 123 is raised, releasing lug 124, and the pusher roll drops on the top blank in the stack, and in the next feed movement of the slide the combined rolling and pushing action of the pusher roll 120
 100 advances a sheet laterally from the stack and the roll is then raised and retracted, and so on. The forward end of link 129 is connected to an arm 130 forming part of a bell crank pivoted at 131, the other arm
 105 132 of the bell crank being located below and between the main carton conveyor chains, Figs. 1, 2 and 5, and being provided with a curved contact surface or finger 133 to engage the bottom surfaces of the advancing cartons. This bell crank structure,
 110 and especially its curved finger piece 133 constitutes a feeler or detector to control the feed of wrapper blanks in accordance with the presence or absence of a carton in the proper position between the main carton
 115 conveyors. The bell crank structure, and especially its pivot point 131, is located so that whenever a carton is properly located between the conveyor chains the advancing lower edge of the carton strikes and de-
 120 presses the finger piece 133 and moves link 129 to the left or toward the front end of the machine, and this causes the stop 126 to be positioned in front of the toe of lug 125, as the blank feed slide 117 approaches its
 125 rearmost position, and the latch 123 is thereupon retracted and the roll 120 dropped on the stack and a sheet is fed in the next advancing movement of the slide, the location of the stack and the arrangement of sheet
 130 advancing instrumentalities between the

stack and assembly position being such that this sheet is brought into assembly relation with the particular carton just mentioned. If, however, a carton is absent from its proper position between the main conveyors, finger piece 133 is moved upward by a spring 134 located about link 129 and compressed between a fixed bracket 135 and a collar 136 on the link, and link 129 simultaneously moves rearward or to the right in Figs. 2, 3 and 12, and by this movement stop 126 is moved out of the path of the toe of lug 125 as the slide 117 approaches its rearmost position, and accordingly latch 123 is not retracted, and in the next advance movement of the slide the pusher roll 120 is retained in elevated position and no sheet is fed. In this way is avoided advancing, gluing and presenting at the assembly position a wrapper sheet in the absence of any carton to be applied to it. Such a presentation of wrapper sheets would require careful attendance and the removal of superfluous sheets by hand with the practically unavoidable application of glue from the sheet surface to various parts of the mechanism and other obvious attendant delays and annoyances.

The forward portion of the wrapper W advanced by the pusher roll passes over a fixed blank-guide plate 137 and under a movable blank-guide and stop-plate 138 located on a carriage 139, which is reciprocated by a segment gear 140 engaging a rack 141 on the carriage, the segment gear being located on a shaft 142 which is oscillated by an arm 143 having a roller engaging a cam groove in a cam body 144 on a shaft 145. The sheet is at the same time brought between an upper gripper roll 146 on a shaft 147 having a fixed axis of rotation and a lower gripping roll 148 mounted on a shaft 149 carried in bearing blocks 149^a mounted for vertical sliding movement on the carriage and secured in position by guides 149^b. In the downward movement of the carriage the bearing blocks are engaged by adjustable stops 149^c carried by arms 149^d secured to a fixed part of the stack guides or guide frame. On the upward movement of the carriage adjustable stops 139^a on the carriage engage the lower ends of the bearing blocks and carry the bearing blocks up with the carriage and so bring the lower feed roll 148 into operative relation to the upper roll 146. In this way sufficient carriage travel is provided for with a limited vertical movement of the lower feed roll sufficient only to give the necessary clearance between the upper and lower rolls for the insertion of the blank, and at the same time provision is made by the adjustable stops 139^a for adjusting the lower roll when in feed position to properly grip the blank. This limited movement of the lower roll is desirable be-

cause, in the present embodiment of the machine the lower roll shaft is driven by a spur pinion engaging a pinion on the upper roll shaft 147, and the teeth of the pinions are long enough to maintain the driving connection during the limited vertical movement of the lower shaft. This driving connection is further explained hereafter. Rolls 146 and 148 constitute primary or initial gripping rolls to withdraw the sheet from the stack after its initial separation and advance by the pusher roll 120. The movable guide plate 138 is provided with sheet stops 150. The upper guide plate 138 is also provided with thin spring blades 150^a accommodated in annular recesses formed in the upper feed roll 146, and these spring blades are arranged to press slightly on the upper surfaces of the lower guide plate 137, (Figs. 11 and 12), which also serves as a blank clamping plate in connection with the spring blades. Just forward of the primary gripping rolls is a plate or shelf 151 over which the sheet slides to upper and lower secondary gripping or feed rolls 152 and 153 mounted on shafts 154 and 155, respectively, and with the aid of angularly bent guide strips 156 the sheet is directed in contact with the glue roll 157. The forward portion of the sheet is deflected upward and passes over the glued surface of the glue roll to substantially uppermost position thereon and the advance edge of the sheet is then brought against the sheet stops 67' on the platen and is gripped by the platen grippers 67, and the forward portion of the sheet is then carried around on the platen while the rearward portion of the sheet is still positively gripped and fed by the feed rollers.

When the forward edge of the sheet is advanced by the pusher roll 120 the carriage 139 is in its lowermost position, Fig. 12, with the plates 137 and 138 separated sufficiently to fully accommodate the blank, and with stops 150 projecting below the rear edge of plate 137 in the path of advance of the blank edge, and the spring blades 150^a bear against the upper surface of the guide and clamping plate 137. Feed roll 148 is retracted from roll 146, the space between the rolls being somewhat exaggerated in Fig. 12 for the sake of clearness, and the roll is supported in this retracted position by its bearing blocks 149^a resting on the fixed stops 149^c. The sheet is then pushed forward between the spring blades and guide plate 137, the springs serving to slightly retard the movement of the sheet, and the advance edge of the sheet is finally located against the stops 150 which properly position the sheet edge in a true transverse line parallel to the feed roll axes; and the sheet movement is continued until a buckle is formed in the sheet at 158 to insure the

proper location of the sheet edge against the stops. The pusher roll 120 is then raised and retracted and the sheet is permitted to settle flat on the top of the stack by subsidence of the buckle 158, and during this time and until the sheet is gripped by the feed rolls, the sheet is held in registered position by the spring blades 150^a. At or just before the moment when the sheet has settled flat on the stack, the elevating movement of carriage 139 commences and after clearance between the stops 139^a and the bearing blocks 149^a is taken up, the bearing blocks are lifted and the lower feed roll grips the sheet against the upper feed roll 146 and feeds it forward.

By the described operations the sheet is located definitely in proper position or in other words registered after it is separated from the stack and is then advanced by the gripper rolls 146, 148, 152 and 153 and maintained in proper position with reference to the blank platen and prevented from lateral or angular dislocation as it passes over the glue roll and until it is gripped by the platen grippers. The sheet is, in other words, accurately and carefully positioned until it can be properly located on the platen and is then by the platen carried around in proper position to be accurately registered in assembly contact with the advancing carton, as more fully described hereafter.

For the automatic lifting of the wrapper stack S, the rod 113, previously mentioned, connected to pawl lever 112, extends upward through suitable guides and is connected by a link 159 to a bell crank arrangement 160, and this is connected by a link 161 to another bell crank arrangement 162 pivoted at 163, this last bell crank mechanism including a plate or presser finger 164 extending over the top of the stack near its rearward end. A block 165 is slidably mounted on rod 113 and its upward movement in relation to the rod is limited by an adjustable stop nut 166 on the rod, and in its downward movement it urges the rod downward by means of a spring 167 arranged between an extension of the sliding block and a lug 168 on the rod. The sliding block 165 is engaged by a bell crank lever 169 fulcrumed at 170 and having a cam roller 171 engaging a cam groove in cam body 144, previously mentioned. In every cycle of the machine the bell crank 169 is oscillated so as to move the block 165 downward just after the rearward edge of the top wrapper sheet has been moved away from under the presser finger 164 in the feeding action of pusher roll 120. This movement of the block is communicated through the spring 167 to rod 113, and so through the linkage to the presser finger, which is urged down into contact with the

top of the stack, and in the further downward movement of the block 165 the spring 167 is compressed, and after the stack is compressed to the extent provided for by the tension of the spring and adjustment of the parts, the block slides down over the rod until the movement of bell crank 169 is completed. In this way the downward movement of the presser finger 164 regulates the downward movement of rod 113 and, therefore, the upward movement of the rearward or right hand end of lever 112, as viewed in Fig. 3, and the distance that pawl 111 is retracted is limited by the position of the top of the wrapper stack, and when sufficient sheets have been removed to permit the pawl 111 to retreat a distance equal to one tooth space of the circular ratchet 109, on the return movement of the bell crank 169 the pawl drives the ratchet forward one tooth space and the stack is elevated a slight distance and retained by the holding pawl 110; during one or more cycles of the machine the presser finger 164 will not descend far enough to permit the pawl 111 to be retracted a full tooth space. but when a sufficient number of sheets has been removed to permit the pawl to retract to the indicated extent, there will be another feeding action to restore the stack to proper elevation, and so on. This mechanism is more fully described in our other application, Serial No. 566,094, above mentioned, and reference should be made to that application for other features of the sheet feed mechanism, not particularly described herein.

In many cases it is desirable to imprint certain readily changeable indicia on packaged goods for the information of the manufacturer or purchaser. For example, it is desirable in many cases to place a date on the package, so that the purchaser may be assured that the goods have been produced or packaged recently enough to be in good condition. Of course, when the inner article, package or carton is enclosed in an outer wrapper as in the present case, it is desirable that this indicia or date shall be on the wrapper. Difficulties are involved in stamping a date on the completed wrapped package; for example, the package is liable to be crushed or otherwise disfigured when it is attempted to stamp the date thereon, especially by machine operations. My invention provides means desirably associated with the sheet feed mechanism for imprinting the date on the wrapper blank, as or just before it is fed to the gluing mechanism and associated with the carton, so that only the wrappers which are to be immediately used are dated, and any difficulty otherwise experienced in dating a suitable number of wrappers for the day's use, or the waste of wrappers im-

properly dated, is avoided. Fig. 12 shows an ordinary hand dating stamp 555 having changeable date characters and ink pad automatically operated by depression of the stamp, as usual. The handle or stem of this date stamp is desirably mounted in a sleeve in a bracket 556 and a spring 557 is located in the sleeve to urge the stem downward and take up excess motion of the bracket. The bracket is carried by a slide mounted on one of the stack guide plates 74 or a fixed part of the stack guide frame and the slide is operated by a linkage 558 connected to link 460 which operates the pusher roll slide 117. When slide 117 is retracted the date stamp is raised clear of the stack and as slide 117 advances, after the rear edge of the blank has moved away from under the stamp, as clearly shown in Fig. 12, the stamp descends and impresses the date or other suitable indicia on the face of the next blank, this face being, of course, the one which is outermost in the completed package. It is only necessary to change or adjust the date characters each morning and the wrappers will then be dated as desired without any particular attention and without waste of improperly dated wrappers.

Below the blank platen 65 and in front of the wrapper stack position, is the glue trough 175 provided on its bottom with lugs 176 formed with angularly arranged runner faces 177 and 178 engaging rail surface 179 formed on transverse frame members 180, so that the glue trough and associated parts, as described hereafter, may be moved into operative position, as in Figs. 1, 3 and 6, or run out to a position indicated in dotted lines in Fig. 6, where it is clear of the machine at the right hand side or the rear side in Figs. 1 and 3, for cleaning of the trough or glue rolls and other parts, replenishing with glue, adjustment or for other purposes. For this purpose the frame members 180 have extensions 181, Fig. 6, projecting out at the side of the machine far enough to permit the trough to be run out to the fully accessible position shown in dotted lines. Desirably the frame members 180 are provided with flanges 182 and the lugs 176 have strips or gibs 183, removably secured to their lower surfaces and under the flanges to prevent upward displacement of the trough. To facilitate the shifting of the trough, a screw 184 is mounted in fixed bearing 185 and nut 185' on the glue trough and this screw may be turned by a hand wheel 186 located in an accessible position at the right hand side of the machine, as clearly shown in Figs. 1 and 6, and secured on a shaft 187 having bearings in frame extensions 181, and the shaft has a bevel gear 188 engaging bevel gear 189 on the adjacent end of the screw 184.

The glue roll 157, previously mentioned, is carried by a sleeve 190 mounted in bearings 191, formed in side members 192, extending up from the sides of the glue trough. A driving shaft 193 extends through sleeve 190 and is connected rotatably with the sleeve by a key or spline 194. Shaft 193 is supported partly in the sleeve and partly in a fixed bearing 195 located on a stationary frame member, and this bearing is arranged to prevent axial movement of the shaft. Near the left side of the machine, Fig. 6, shaft 193 has a beveled gear 196, by which it is driven in a manner later described. By the described arrangement the glue roll shaft 193 may be continuously driven either in operative or extended position of the glue trough, and this driving connection is maintained at all times, the sleeve 190 sliding over shaft 193 when the glue trough is moved in or out. Below the glue roll is a dipper roll or glue transfer roll 197, carried by a shaft 198 located in bearings in a frame 199 having surfaces arranged to slide on upper side edges of the glue trough. This frame has an adjustable scraper blade 200 to regulate the amount of glue carried by the roll. The frame is also provided with arms 201 located outside the trough, and in these arms are screw blocks 202 in threaded engagement with screws 203 mounted in bearings at 204 and 205 on the trough, and at the forward ends the screws have hand wheels 206, so that by rotating the screws the frame 199, may be moved back to permit the dipper roll to be cleaned and forward to bring the roll in proper contact with the main glue roll, and the two ends of the frame may be independently adjusted so that the proper alinement and contact of the rolls may be secured. Screw blocks 202 are pivotally mounted in the cleaved ends of arms 201 so that when the frame and the distributing roller are withdrawn by the screws, the roll may be tipped back to facilitate cleaning it and the main glue roll and to give access to the forward part of the trough and other parts of the glue mechanism.

The shafts 154 and 155 of the secondary wrapper feed rolls 152 and 153, previously mentioned, are mounted in bearings in the glue trough side members 192. These shafts are connected by pinions 210 and 211, and pinion 211 is driven by an idler pinion 212 from a gear 213 on the right hand end of glue roll sleeve 190. The transfer or dipper roll 197 is driven by a gear 214 engaging a pinion 215 on the left hand end of sleeve 190.

Blank shelf 151, previously mentioned, is secured on an extension 216 of the rear wall of the glue trough, and this wall is also provided with a trough shaped formation 217 enclosing the lower part of feed roll 153 and protecting it from glue. Blank guide strips

156, previously mentioned, are carried by a cross piece 218 secured to trough extensions 192. The glue roll has a plurality of spaced slots 219 in which are located arc-shaped portions of vertical stripper plates 220, which are carried by a rod 221 located in forward portions of the trough extensions 192, and these stripper plates have upward arc-shaped portions 222, corresponding to a small lower segment of the blank platen 65 and spaced away from it slightly to permit passage of the wrapper blanks. These stripper plates aid in stripping the blanks from the glue roll as they pass on around the platen.

The entire gluing mechanism is, therefore, arranged as a unit in association with the glue trough, and this part of the machine also includes the feed rolls 152 and 153, shelf 151 and the stripper plates 220, and all the parts are associated so that they may move in and out with relation to the other parts of the machine when the glue trough is shifted in the manner previously described, and when the trough is in inward operative position all the associated parts are properly located in relation to other parts of the machine without any particular attention of the operator.

The face of the blank platen 65 is provided with a plurality of spaced shallow channels 225, and in these channels are located blank and assembly supporting bands 226 which also pass around pulleys 227 on a shaft 228, which has a pinion 229 driven by an idler gear 230 mounted on a shaft 231, and the idler gear engages a gear 232 on platen shaft 66 so that by the described connections pulleys 227 are driven at the same surface speed as the platen. The bands 226 are adjustably tensioned by jockey pulleys 233 carried by a sleeve 234 mounted on shaft 231, and the sleeve is secured in adjusted position by a sector slot 235 and screw 236 which clamps the sector against a stationary part of the machine. The upper stretches of the bands 226 are then held suitably taut and flat in line with the slideway strips 20. Below the upper stretches of the bands 226 are longitudinal supporting strips 226^a carried by a cross bar 226^b secured to side frame members. Above the bands are longitudinal pressing strips 600 carried by stems 601 passing through cross bars 602, secured to upper longitudinal frame members 55. Springs 603 urge the pressing strips downward.

The wrapper blanks W are advanced from the stack with the marginal portions *e* in advance and are glued and properly positioned on the platen in the manner previously described and are carried around by the platen as indicated in Figs. 13 and 6, and as the foremost part of the blank reaches uppermost position on the platen a carton

is advanced by the main conveyor chains 12 and the foremost lower corner is brought in contact with the glued surface of the blank at the line of intersection between the blank margin portion and the blank section *b*, as clearly shown in Fig. 14^a. The periphery of the platen and the main carton conveyors move at the same linear speed, and after a short further movement of the blank and carton to the right in Fig. 14^a, the blank grippers 67 are opened, as shown in that figure. The blank section *b* is then brought in contact with the entire carton surface *b'* by a rolling and pressing action, and as the assembly so produced passes on beyond the platen it is supported by the bands 226 with the blank resting on the bands and the carton superimposed upon the blank in proper registered position, with blank margin *e* projecting in front, and the remaining portions of the blank, that is sections *d*, *a* and *c*, trailing behind the carton supported by the bands, Fig. 14^a. The upper stretches of the bands are supported by the strips 226^a and the carton is yieldingly urged downward in firm contact with the blank by the pressing strips 600.

The blank margin *e* is now to be turned up on the lower portion of carton face *c*, and for this purpose, as the advancing edge of the assembly reaches a point over shaft 228, it is brought over chains 240, the forward bends of which pass around sprockets 241 on shaft 228. The rear bends of the chains pass around sprockets 242 on a shaft 243 mounted in slots in brackets 244 secured to longitudinal frame strips 56 and adjusted by screws 245 to properly tension the chains. The upper stretches of the chains are supported by longitudinal strips 610 which are carried by frame cross members 238 and 238^a, Fig. 9. The chains 240 serve in part as assembly conveyors and they also carry the blank margin turning and pressing fingers 250 arranged in a plurality of transverse rows, the rows being spaced on the chains 240, in accordance with package intervals, and a suitable number of the fingers being provided in each row. Specifically in the present embodiment at each finger location on each of the chains 240, the chain is provided with a fitting 251, Fig. 9, and at each side of this fitting a finger piece 252 is pivoted on a pin 253 which may be identical with one of the chain link pivots. The upper portion of the finger piece is bifurcated to provide the individual fingers 250, and a stud 254 bridges the slot thus formed, and a spring stem 255 connected to this stud passes through an abutment 256 on fitting 251 and supports a spring 257, which urges the fingers 250 outward and upward, away from the chain. Each finger piece also has an inward or downward extending member or

toe 258, and these toes near the forward portion of the chain travel, run on cam surfaces 259 in fixed position about the shaft 228. Shortly before the finger pieces run around sprockets 241 to the position shown in Fig. 9, the toes 258 encounter cam surfaces 259 and the fingers are retracted toward the chains and rise in this position until as the assembly and finger pieces move on toward the right from the position there shown, the fingers are released by toes 258 passing off of the cam surface, and at the same time the fingers are brought up above the level of the lower carton surface, raising the wrapper margin *e* and pressing it firmly against the carton face *c'*, as shown in Figs. 3, 9 (at the right) and 14^b. The fingers continue to hold the wrapper margins against the carton and the assemblies are carried on to the initial folding position with the unattached portions of the wrapper trailing along and supported on chains 240. Rather wide, flat blank end or flap supporting strips 620 are supported by cross pieces 238 and 239, and these strips serve to support end flaps, such as the end flaps *g*, *h*, *k* and *m*, as the assembly proceeds to the initial folding position. At their forward ends the outer portions of these strips have angular or pointed downwardly curved portions 621 which serve to pick up the long end flaps *m*, and the strips also have angular beveled faces at 622 to pick up the narrower flaps, such as *g*, *h*, *k*.

Pressing strips 630 similar to strips 600, previously described, and provided with springs in a similar way, are arranged above the chains 240 and hold the cartons down in proper position on the blanks as the assemblies advance on the chains.

As the assembly leaves the strips 237 it passes over a folding roll 265, carried by a shaft 266 running in bearings on the plungers 267 arranged to reciprocate slightly in sleeves 268 carried by brackets 244. Springs 269, Fig. 4, are provided to urge the plungers outward, and the outward movement of the plungers and consequently the extended position of the roller 265 is adjustably limited by nuts 270, screwed on the forward ends of the plungers extending out beyond the sockets. Quickly thereafter the rearward or advancing face *c'* of the carton is brought against a pressing abutment consisting of a plate 272 at the rear side of a vertical folding space or channel 273 into which the assembly is presently to be depressed.

When desired another pressing roll 274 may be located at the rear of the vertical folding channel opposite pressing roll 265. This additional pressing roll 274 may be mounted on plungers 275, which are provided with springs substantially as in the

case of roll 265. In some cases this roll is unnecessary and is removed.

Means, best shown in Figs. 23 and 24, are provided to preserve the alinement of the assembly and prevent downward displacement, as it is located at the top of the folding channel. Arms 640 are connected to a rear upright frame member and have narrow straight portions 641 extending forward above the blank and under the rear ends of the main conveyor chains, these straight portions being spaced apart to closely receive the carton between them, and by engagement with the carton ends to direct it forward in a straight line without lateral or angular displacement. The arms also have outwardly recessed or offset portions 642 in which are spring pressed plates 643 having outwardly curved forward ends 644. These plates yieldingly engage the carton ends as the carton is located above the folding channel and by the pressure of springs 645 retain the carton in position until it is depressed into the folding channel, as later described.

As the carton is positioned against the abutment 271 and between the spring plates 643, rollers 62 of the carton pusher blades encounter depressions 280 formed in the cam tracks 63. The pusher blades are thus allowed to yield backwardly while exerting spring pressure against the cartons to locate them in the position above described until the blades are withdrawn laterally away from the ends of the carton as the chains move around the rear sprockets 53.

The carton is now located directly below a pusher plate 285 carried by plunger 286 mounted in a vertical guideway 287, and the pusher plate is moved down by a lever 288 mounted on shaft 289, which oscillates in a sleeve 290, secured to a frame cross member 291, the lever being connected to the plunger by a link 292. The lever is oscillated at the proper time to move the pusher plate down and back by a link 293 connected to an arm 294 on a rock shaft 295, which has another arm 296 provided with a cam roller 297 engaging a suitable cam track 298 in a cam body 299 mounted on a shaft 300 which is continuously driven in a manner hereafter described. The pusher plate pushes the assembly down between rolls 265 and 274. Roll 274 additionally presses the wrapper margin *e* in position while roll 265 turns up and presses wrapper section *d* against carton face *d'*. In further downward movement of the assembly the other portions of the wrapper, that is sections *a* and *c*, trail over the roll 265.

Below the initial folding space 273 a rotary folding and transfer turret 310 is mounted on a horizontal shaft 311. This turret has a series of equally spaced pockets

312, the pockets being open at the ends, the sides of each pocket being defined by a normally fixed plate 313, (although this plate may be made adjustable when desired) and a movable plate 314 having a facing 315 of compressible material, such as felt, and carried by arms 316 and 317 secured to a shaft 318, which passes through a bearing hole formed in the turret body. One of the arms 317 has an extension 319, provided with a cam roller 320 running on the periphery of a fixed cam body 321. The cam body is concentric with the shaft and is carried by a sleeve 322 provided with arms 323 secured to fixed points on the frame. The movable plates 314 are normally held in open position by springs 324 guided by spring rods 325 passing through lugs 326 on the turret, and the outward movement of the plates is adjustable by nuts 327 on the outer ends of the rods. The cam periphery is contoured so that as each pocket approaches upper position in Fig. 4, the plate 314 is slightly retracted to permit entry of the assembly which then rests against the pocket base 330.

Opposite the ends of the pocket in upper position, Figs. 4 and 8, are flap folding plates 331 extending upward to a point just below the level of rolls 265 and 274 and having their sides tapered as at 332 and having their upper ends 333 bent slightly outward. These plates are carried by stems 334 passing through sleeves 335 in brackets 336 extending from side frame members and springs 337 placed about the stems to urge the plates inward until stopped by adjustable nuts 338. As the assembly moves downward into the pocket the flaps *g* are folded up and pressed by plates 331 and the plates also exert a sliding pressing movement and retain the flaps in position as the pocket moves away from upper position to the left, is indicated by the arrow in Fig. 4.

The turret is advanced intermittently by suitable mechanism, such as a Geneva movement including a Geneva wheel 340 fixed on shafts 311 and a driving roller 341 and locking segment 342 carried by a shaft 343, this shaft being constantly driven in a manner later described. The wheel pauses when each pocket is in uppermost position to receive the assembly and then moves on one-eighth turn at each rotation of shaft 343, according to the particular turret arrangement shown, in which there are eight pockets. Just after the assembly begins to move away from upper position, Fig. 4, it is clamped in the pocket by the corresponding cam roller 320 coming into a depression on the periphery of cam 321, and the assembly is retained in the pocket and wrapper portions *e* and *d* are pressed and held in position during three-fourths rotation of the

turret, that is until they reach the discharge point at the right, Fig. 4. As the assembly moves away from upper position, also, the outer surface of the wrapper is brought against the ends of the bristles of a brush 345 held by bracket 346, and this brush folds and presses wrapper section *a* down upon carton surface *a'*, the remaining portion *c* of the wrapper trailing along and projecting over pocket wall 313. The assembly is then in the further movement of the turret brought under peripheral guard strips 350, which extend around nearly to the assembly discharge point. Shortly thereafter the assembly is brought between arc-shaped flap-folding and pressing plates 355, carried by brackets 356 and yieldably mounted in a similar fashion to plates 331, and by these plates 355 the flaps *k* are folded up and pressed in position and so retained during a considerable part of the further movement of the assembly. From this point on all parts of the wrapper, except section *c*, with its flaps *h* and flaps *m* are folded and secured and the section *c* trails behind the assembly while flaps *m* project laterally at the ends until the assembly reaches discharge position at the right Figs. 4, 21, and 22. At this point the ends of the partly wrapped carton are brought in operative relation to discharge pushers 360 carried by reciprocating rods 361 mounted in guides 362, and at the same time the assemblies are released by retraction of plates 314 as the cam roller 320 comes into a depressed portion of the cam just before the turret comes to rest. The assembly is now ejected between a lower horizontal supporting plate 365 and an upper vertically movable pusher plate 366 by rearward movement of the ejector fingers 360. This movement is produced by rock arms 368 fixed on a shaft 369 and connected to the rods 361 by end sockets 370 engaging pivoted trunnion blocks 371 on the rods. Shaft 369 is oscillated by an arm 373 provided with a cam roller engaging a cam groove in a cam body 376 on shaft 300, previously mentioned.

As the assembly passes out of the pocket wrapper section *c* is folded up and pressed against carton surface *c'* and over the previously affixed marginal portion *e* by a brush 380 located on a suitable support such as the rearward ends of the guard strips 350, which are themselves secured to a bracket 381 which carries the plate 365. The wrapper section *c* is additionally pressed and secured by sliding over the plate 365. The ends of the assembly now rest on the inward ends of flap folding plates 382 pivoted on shafts 383 secured in the ears of bracket 384. The plates are normally held in horizontal position by springs 385. The assembly is now moved down by depression of a plunger 386

which carries the pusher plate 366, this movement being effected by a lever 387 fulcrumed on shaft 289, previously mentioned and connected by a link 388 to the plunger 5 and also connected by a link 389 to an arm 390 carried by a sleeve mounted on the shaft 295, previously mentioned, and the sleeve has an arm 391 provided with a cam roller engaging a cam groove in cam body 10 299, also previously mentioned.

In the downward movement of the assembly the inward portions of plates 382 are tilted downward to bring the plates into vertical position close to the package ends and flaps *h* are folded up and pressed on the ends of the carton. The carton is now located on the horizontal support 400 arranged to slide on rods 401 and provided with an upright pusher 402. The support 20 400 is reciprocated by a lever 403 connected to the slide 404 and the lever is fulcrumed at 405 and has a downward extension 406 provided with a cam roller 407 engaging the periphery of a cam 408 on shaft 300. 25 The lever is moved rearward in the assembly feed movement by a spring 409 when a suitable depression in the cam 408 comes opposite the roller 407. In the first part of this final rearward movement of the assembly, it is brought between vertical folding plates 410 yieldingly mounted, as in the case of other folding plates previously described, and these plates turn and press the projecting flaps *m* on the ends of the carton and 30 over the flaps, previously affixed. In the same movement the assembly slides over a horizontal supporting plate 411 and below upper pressing and guide strips 412 carried by a cross piece 413 and is then brought between the inner rearwardly moving stretches of conveyor belts 414, which run over front pulleys 415 and rear pulleys 416. The active stretches of these belts run over a series of intermediate pulleys 417 carried 35 by frame work 418 to hold the belts in pressing engagement with the package ends at a multiplicity of points as the packages advance to the discharge position at the rear. The packages are supported during this final movement by horizontal strips 419. 40 The shafts 420 of pulley 416 are carried by blocks 421 slidably mounted in rear frame members 422 and adjusted by screws 423 to properly adjust the belt tension. The forward pulleys 415 are mounted on shafts 424, located in bearings 425 and these shafts are driven by bevel gears 426 from a horizontal shaft 427, which is driven in a manner described below. 45

An important feature of the folding and pressing mechanism as above explained, is that each part of the wrapper folded and applied to the carton is held and pressed during a suitable time or during a suitable portion of its movement immediately after 50

the initial folding and pressing operation, or is additionally pressed and held in position at subsequent points of the assembly travel to insure the proper location and retention of the successive wrapper portions 70 until the adhesive sets sufficiently to make the attachment permanent, and especially the rectangular end flaps *m* which are the last portions of the wrapper affixed, are held firmly against the package ends during 75 the time that the packages are advanced between the final or discharge conveyors 414, insuring the proper completion and permanent assembly of the package.

The spring pressed plates 643, best shown 80 in Fig. 24, are sufficient to support the assembly in the initial folding position in the case of many classes of packages, especially those which are of light or moderate weight, but when the packages are unusually heavy 85 or when for other reasons more positive supporting means are needed at this point, other supporting means may be provided and usually when such other means are provided the means shown in Fig. 24 may be 90 omitted. As best shown in Figs. 1, 4, 7 and 8, such additional supporting means may consist in one desirable form of blades or fingers 650, which in normal position are 95 in line with the blanks as the assembly is moved into the top of the vertical folding channel, that is in the position shown in Figs. 1 and 4. These supporting blades are spaced apart so that they may pass down 100 between the end flap folding plates 332, but outside the parts of the turret which form the assembly pockets. These blades are connected to plungers 651 arranged to reciprocate in sleeves 652 and the plungers are connected at their upper ends by a cross piece 105 653, which is connected by a link 654 to a lever 655, fulcrumed at 656 on the rear frame upright. The lever is connected by a vertical link 657 to a bell crank 658, fulcrumed at 659, on a sleeve which may be 110 rotatably mounted on the cross shaft 295, previously mentioned, which carries bell crank members for the operation of other plungers. The bell crank has a cam roller 660 engaging a cam track in a cam plate 115 661, secured to one face of the cam body 408, previously mentioned. The cam track is contoured so that the supporting blades 650 are depressed along with the pusher plate 285 to carry the package and associated blank positively down between the flap folding plates 332 and into the pocket with the weight of the carton meanwhile supported on the blades. The supporting blades 120 are then held down level with the bottom of the turret while the pusher plate 285 is raised and the turret is rotated, as previously described, carrying the package away from the supporting blades, which are then free to rise and are raised by the action 125 130

of the cam groove to normal position ready to receive another assembly.

In the broader aspect of the invention any suitable driving means and driving connections for the various parts of the mechanism may be employed. The invention, however, in the present embodiment, provides complete driving arrangements for all the parts as follows: The initial driving member is a pulley 430 on a transverse shaft 431. This shaft has a pinion 432 engaging a gear 433 on transverse shaft 434. A clutch member 435 is slidably splined on shaft 434 and cooperates with the driven clutch member 436 carried by a sleeve 437 rotatably mounted on the shaft. The clutch is shifted by a shifting fork 438 carried by a vertical rock shaft 439, and this is connected by a suitable linkage 440 to a horizontal rock shaft 441 provided with a control lever 442. The clutch may be thrown in and out to simultaneously start and stop all parts of the mechanism driven from the sleeve 437, as now to be described. The sleeve carries a gear 445 engaging a gear 446 on shaft 300, and this gear also engages a gear 447 mounted on the short shaft 343, which carries the driving and locking members of the Geneva mechanism for driving turret 310. Shaft 300 carries the various cam bodies which operate various reciprocating feed elements, as sufficiently described above. Shaft 300 also has a gear 450 engaging a gear 451 on a transverse shaft 452 and this shaft has a pinion 453 engaging a gear 454 on shaft 427, previously mentioned, from which the final compressing and discharge conveyors 414 are driven. Shaft 300 also has a bevel gear 456 engaging a bevel gear 457 on longitudinal shaft 458. The shaft has a cam 459 which operates the sheet feed slide 117 by means of linkage 460, Fig. 3. At its forward end shaft 458 also has a bevel gear 465 which drives a bevel gear 466 on a horizontal shaft 467 which has another bevel gear 468 engaging a similar gear 469 on a vertical shaft 470, Fig. 6. At the upper end this shaft is connected by bevel gears 471 to a horizontal shaft 472 carrying a gear 473 which engages gear 232 on the platen shaft 66 to drive the platen and other parts interconnected with it, as previously explained. Shaft 145, which carries cam body 144 driving the reciprocating carriage 139 for clamping and feeding the wrapper blanks is driven by a vertical shaft 476 connected by bevel gears 477 to shaft 231 of idler gear 230 and connected by bevel gears 478 to shaft 145. The upper primary blank feed roll 146 is driven by a pinion 480 on its shaft 147 engaging idler gear 230. The lower primary feed roll 149 is driven by a pinion 481 on its shaft 149 engaging a gear 482 on the upper roll shaft 147, and the teeth of this pinion and gear are long enough

so that they remain in rotative engagement as the shaft axes move toward and from each other slightly in the reciprocation of carriage 139.

In axial alinement with shaft 458 and extending toward the front end of the machine is a shaft 485 driven by a bevel gear 486 engaging bevel gear 466, previously mentioned. Shaft 485 has a bevel gear 487 engaging a bevel gear 488 on a short shaft 489, which also carries a spur gear 490 engaging a pinion 491 on a transverse shaft 492 which has two bevel gears 493 engaging similar gears 494 on short vertical shafts 495, and these shafts are connected by universal joints and upright shafts 496 to the lower ends of the short shafts 52 carrying the forward driving sprockets of the main carton conveyors 12. At its forward end shaft 485 has a gear 500 in a gear box 501 engaging an idler gear 502 on a shaft 503 and the idler gear engages another gear 504 on a shaft 505 which is connected by bevel gears to shaft 25, previously mentioned, carrying the drive pulley 24 of the supply conveyor. Shaft 505 also has a bevel gear 508, Fig. 2, engaging a bevel gear 509 on an upright shaft 510. On this shaft is a bevel gear 511 driving a similar gear 512 on a short longitudinal shaft 513, Fig. 5, and this shaft is connected by a spur pinion 514 to idler gear 29, previously mentioned, which drives the elevating conveyor. At its upper end shaft 510 has a bevel gear 520 driving a similar gear 521 on shaft 47, previously mentioned, which carries the driving sprocket 48 of the intermediate or transfer conveyor 11.

An independent drive for the glue roll and parts driven from or in connection with it, is provided as follows: Shaft 434 which is continuously driven when the main driving shaft 431 is driven, whether clutch 435 is engaged or disengaged, has a bevel gear 530 engaging a bevel pinion 531 on a longitudinal shaft 532 and this shaft is connected by bevel gears 533 to a vertical shaft 534 which is connected by a bevel gear 535 to the bevel gear 196, previously mentioned, on shaft 193, which is in splined connection with sleeve 190 carrying the glue roll 157. In this way the glue roll and its connected parts is driven continuously whether other parts of the mechanism controlled by clutch 435 are running or not.

A hand wheel 540 is desirably provided on the primary shaft 431 to enable the machine to be turned over slowly by hand.

A central part of the machine at one side, particularly the right hand or near side as viewed in Fig. 1, is left practically unobstructed for easy access to the blank stack, glue roll and other parts of the mechanism and to permit the glue tank to be run out and the stack to be replenished in the man-

ner previously described. This is accomplished in the present embodiment of the invention by supporting the right hand ends of a number of the shafts and particularly the platen shaft 66, idler shaft 231, band and conveyor chain shaft 228 and roll shaft 147 on a frame bracket 550 supported from upper longitudinal frame members, such as the right hand longitudinal frame strip 56.

Reference is hereby made to our co-pending applications which disclose and claim certain sub-combinations or subordinate features of the present mechanism:—Serial No. 566,094, filed June 5, 1922, and Ser. No. 674,884, filed Nov. 15, 1923.

What we claim is:—

1. A method of wrapping comprising advancing and adhesively coating a wrapper, advancing and bringing an article into contact with an accurately determined part of the adhesive wrapper surface during concurrent advance of the wrapper and article, with a marginal part of the wrapper extending beyond the package in one direction and a long part of the wrapper extending beyond the package in the opposite direction, folding and securing said wrapper margin to an adjacent face of the article during advance of the assembly to an initial wrapping position, and folding and securing portions of the wrapper successively in adherent surface contact with the article to form a complete tight-wrapped covering.

2. A method of wrapping in which an article is enclosed in a wrapper adhesively secured in substantially complete facial contact with the article, said method comprising advancing an article, advancing and adhesively coating a wrapper, bringing the article into contact with an accurately determined part of the adhesive wrapper surface during concurrent advance of the wrapper and article, with a narrow marginal part of the wrapper extending beyond the package in one direction and a long part of the wrapper extending beyond the package in the opposite direction, turning and securing said narrow wrapper margin to the article during advance of the assembly to an initial wrapping position, and folding and securing the wrapper about the article to form a complete tight-wrapped covering.

3. A wrapping method in which a substantially rectangular article is enclosed in a paper wrapper having body sections to cover sides of the article, a narrow marginal portion at one end to be affixed to a marginal part of one side of the article and end flaps to cover the article ends, said method comprising advancing and adhesively coating one surface of such a wrapper, concurrently advancing an article and bringing one of its sides in contact with a body section of the wrapper, turning up said wrapper margin on an adjacent side of the article during

further advance of the assembly to secure its parts in registered relation, continuing the advance of the assembly to an initial wrapping position, and folding and securing successive portions of the wrapper adherently about the article.

4. A wrapping method in which a substantially rectangular carton is enclosed in a paper wrapper having body sections to cover sides of the article, a narrow marginal portion at one end to be affixed to a marginal part of one side of the article and form a part of a wrapper lap-joint on said side of the completed package and end flaps to cover the ends of the article, said method comprising advancing and adhesively coating one surface of such a wrapper, concurrently advancing an article and bringing one of its sides in contact with a carefully predetermined body section of the wrapper during the concurrent advance movement, quickly turning up said wrapper margin on an adjacent side of the article during further advance of the assembly to secure its parts in registered relation, continuing the advance of the assembly to an initial wrapping position, and completely folding and adherently securing the wrapper about the article.

5. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article, and means for turning and securing said wrapper part upon an adjacent side of the article to secure the wrapper in registered contact with the article during advance of the assembly to an initial wrapping position.

6. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article, means for carrying the article and wrapper away from the point of assembly contact and means operating during such travel of the assembly to turn and secure said projecting wrapper part upon an adjacent surface of the article and thus retain the wrapper in registered position prior to the principal wrapping operations.

7. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article in one direction and a part of the wrapper projecting beyond the article in the

opposite direction, means for moving the assembled article and wrapper from assembly position to an initial wrapping position, and means acting during such movement to turn and secure one of said wrapper parts against an adjacent face of the article.

8. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one surface of a wrapper, means for moving the article into assembly contact with a predetermined part of the coated wrapper surface with a narrow marginal part of the wrapper projecting beyond the article in one direction and a long portion of the wrapper projecting beyond the article in the opposite direction, means for moving the assembled parts from assembly position to an initial wrapping position, and means acting during such movement to turn and secure said wrapper margin against an adjacent side of the article to secure the parts in registered assembly contact.

9. In a wrapping machine, wrapping mechanism for folding and securing successive portions of a wrapper about an article to form a sealed wrapped package, and assembly mechanism comprising means for advancing a wrapper, means for adhesively coating the wrapper, means for bringing the article in assembly contact with the wrapper during concurrent advance with one face of the article in definitely registered contact with a part of the adhesive surface of the wrapper and a marginal portion of the wrapper projecting beyond said article face in one direction and a longer portion of the wrapper extending in the other direction, means for advancing the assembly to the wrapping mechanism, and means for turning said wrapper margin against an adjacent face of the article during the last named assembly movement,

10. In a wrapping machine, wrapping mechanism for folding and securing successive portions of a wrapper about an article to form a sealed wrapped package, and assembly mechanism comprising means for advancing a wrapper, means for adhesively coating the wrapper, means for bringing the article in assembly contact with the wrapper during concurrent advance with one face of the article in definitely registered contact with a part of the adhesive surface of the wrapper and a marginal portion of the wrapper projecting beyond said article face in the direction of advance and a longer portion of the wrapper trailing behind the article, means for advancing the assembly to the wrapping mechanism, and means for turning up and securing said wrapper margin to the advancing face of the article during the last named assembly movement.

11. Wrapping mechanism comprising

means for producing an assembly consisting of an adhesively coated wrapper and an article in registered contact with a portion of the adhesive wrapper surface, and with a marginal portion of the wrapper extending beyond the article, means for advancing the assembly to an initial wrapping position, and means acting during such advance to turn up and secure the wrapper margin against an adjacent face of the article.

12. Wrapping mechanism comprising means for producing an assembly consisting of an adhesively coated wrapper and an article in registered contact with a portion of the adhesive wrapper surface, and with a marginal portion of the wrapper extending in advance of the article, means for advancing the assembly to an initial wrapping position and means acting during such advance to turn up and secure the wrapper margin against the advance face of the article.

13. Wrapping mechanism comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for removing single wrappers from the stack and advancing them, means for gluing the wrappers, means for bringing each article in definitely registered assembly contact with a part of the adhesive face of a wrapper to form an assembly in which a marginal part of the wrapper projects beyond the article and a long part of the wrapper projects beyond the article in another direction, means for conveying the assembly away from the assembling position to an initial wrapping position, and means acting close to assembling position to turn up and secure the wrapper margin against the adjacent face of the article.

14. Wrapping mechanism comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for removing single wrappers from the stack and advancing them, means for gluing the wrappers, means for bringing each article in definitely registered assembly contact with a part of the adhesive face of a wrapper to form an assembly in which a marginal part of the wrapper projects beyond the article and a long part of the wrapper projects beyond the article in another direction, means for conveying the assembly away from the assembling position to an initial wrapping position, means for concurrently supporting the long extending portions of the wrapper, and means acting close to assembling position to turn up and secure the wrapper margin against the adjacent face of the article.

15. Wrapping mechanism comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for removing single wrappers from the stack and advancing them in

definite relation to article movement, means for gluing advancing wrappers, means for bringing each article in definitely registered assembly contact with a part of the adhesive face of a wrapper to form an assembly in which a marginal part of the wrapper projects in advance of the article and a long part of the wrapper trails behind the article, means for conveying the assembly away from the assembly position to an initial wrapping position, and means acting during such movement to turn up and secure the wrapper margin against the adjacent face of the article.

16. Wrapping mechanism comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for removing single wrappers from the stack and advancing them in definite relation to article movement, means for gluing advancing wrappers, means for bringing each article in definitely registered assembly contact with a part of the adhesive face of a wrapper to form an assembly in which a marginal part of the wrapper projects in advance of the article and a long part of the wrapper trails behind the article, means for conveying the assembly away from the assembly position to an initial wrapping position, means for concurrently supporting the trailing portion of the wrapper, and means acting during such movement to turn up and secure the wrapper margin against the adjacent face of the article.

17. A machine of the class described comprising means for advancing an article, means for supporting a stack of sheets, means for separating sheets successively from the stack, means for registering the sheets after separation, means for advancing the sheets in registered relation to package movement, means for adhesively coating the sheets during their advance, means for bringing an article in registered contact with a portion of the adhesive surface of a sheet during concurrent advance toward an initial wrapping position and with a portion of the sheet extending beyond the article, and means for turning up and securing said extending sheet portion upon the article during movement away from the assembly point.

18. A machine of the class described comprising means for advancing an article, means for supporting a stack of sheets, means for separating sheets successively from the stack, means for registering the sheets after separation, means for advancing the sheets in registered relation to package movement, means for adhesively coating the sheets during their advance, means for bringing an article in registered contact with a portion of the adhesive surface of a sheet during concurrent advance toward an initial wrapping position and

with a portion of the sheet extending in front of the article, means for turning up and securing said extending sheet portion upon the article during movement away from the assembly point, and means for folding and securing the wrapper adherently to the article.

19. A wrapping machine comprising means for advancing a spaced series of articles, means for supporting a stack of wrapper sheets, means for separating individual sheets successively from the stack in timed relation to article movement, means for registering each sheet adjacent to its point of separation, means for advancing the sheet and simultaneously securing it against dislocation from registered relation to an article, means for adhesively conditioning one surface of the sheet during such advance, means for moving an article into assembly contact with a sheet with one face of the article definitely registered on a part of the adhesive wrapper surface and with a marginal portion of the wrapper extending in front of the article, means for moving the assembly to an initial wrapping position, and means acting during the last named movement to turn up and secure the wrapper margin against the adjacent face of the article.

20. A wrapping machine comprising means for advancing a spaced series of articles, means for supporting a stack of wrapper sheets, means for separating individual sheets successively from the stack in timed relation to article movement, means for registering each sheet adjacent to its point of separation, means for advancing the sheet and simultaneously securing it against dislocation from registered relation to an article, means for adhesively conditioning one surface of the sheet during such advance, means for moving an article into assembly contact with a sheet with one face of the article definitely registered on a part of the adhesive wrapper surface and with a marginal portion of the wrapper extending in front of the article and with a long portion of the wrapper trailing behind the article, means for moving the assembly to an initial wrapping position, means for concurrently supporting the trailing portion of the wrapper, and means acting during the last named movement to turn up and secure the wrapper margin against the adjacent face of the article.

21. A wrapping machine comprising means for advancing a spaced series of articles, means for supporting a stack of wrapper sheets, means for separating individual sheets successively from the stack in timed relation to article movement, means for registering each sheet adjacent to its point of separation, means for advancing the sheet and simultaneously securing it

against dislocation from registered relation to an article, means for adhesively conditioning one surface of the sheet during such advance, means for moving an article into assembly contact with a sheet with one face of the article definitely registered on a part of the adhesive wrapper surface and with a marginal portion of the wrapper extending in front of the article, means for moving the assembly to an initial wrapping position, and means acting during the last-named movement to turn up and secure the wrapper margin against the adjacent face of the article, and means for folding and securing the wrapper about the article.

22. A wrapping machine comprising means for advancing a spaced series of articles, means for supporting a stack of wrapper sheets, means for separating individual sheets successively from the stack in timed relation to article movement, means for registering each sheet adjacent to its point of separation, means for advancing the sheet and simultaneously securing it against dislocation from registered relation to an article, means for adhesively conditioning one surface of the sheet during such advance, means for moving an article into assembly contact with a sheet with one face of the article definitely registered on a part of the adhesive wrapper surface and with a marginal portion of the wrapper extending in front of the article and with the long portion of the wrapper trailing behind the article, means for moving the assembly to an initial wrapping position, means for concurrently supporting the trailing portion of the wrapper, and means acting during the last named movement to turn up and secure the wrapper margin against the adjacent face of the article, and means for folding and securing the wrapper about the article.

23. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism for adhesively conditioning the advancing wrappers, and means for moving the gluing mechanism as an operative unit to operative position, or away from operative position to a point substantially clear of the machine for cleaning or adjustment.

24. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism for adhesively conditioning the advancing wrappers, means for moving the complete gluing mechanism to operative and inoperative positions, and means for driving the gluing mechanism in operative and inoperative positions.

25. A wrapping machine comprising a frame substantially free and open at a part of one side, means for advancing a series of articles, a wrapper stack magazine, means for separating and advancing individual wrappers from the stack for application to the articles, and gluing mechanism for applying adhesive to the advancing wrappers, said gluing mechanism being arranged for movement as an operative unit laterally away from operative position to a point substantially clear of the machine, at said free frame space.

26. A wrapping machine comprising a frame substantially free and open at a part of one side, means for advancing a series of articles, a wrapper stack magazine, means for separating and advancing individual wrappers from the stack for application to the articles, and gluing mechanism arranged for movement as an operative unit to and from operative position at the open side of the machine.

27. A wrapping machine comprising a frame substantially free and open at a part of one side, means for advancing a series of articles, a wrapper stack magazine readily accessible at said free frame space, means for separating and advancing individual wrappers from the stack for application to the articles, and gluing mechanism for applying adhesive to the advancing wrappers, said gluing mechanism being arranged for movement as an operative unit laterally away from operative position to a point substantially clear of the machine at said free frame space.

28. A wrapping machine comprising a frame substantially free and open at a part of one side, means for advancing a series of articles, a wrapper stack magazine readily accessible at said free frame space, means for separating and advancing individual wrappers from the stack for application to the articles, and gluing mechanism arranged for movement as an operative unit to and from operative position at the open side of the machine.

29. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism arranged as an operative unit and comprising a glue trough and a glue roll revolubly mounted thereon and arranged to apply adhesive to advanced wrapper sheets, guide ways, and means for moving the trough on the guide ways to operative position and to an inoperative position substantially clear of the machine at one side.

30. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly

contact with the articles, gluing mechanism arranged as an operative unit and comprising a glue trough and a glue roll arranged to apply adhesive to advanced wrapper sheets, blank gripping and feed rolls, guide ways, and means for moving the trough on the guide ways to operative position and to an inoperative position substantially clear of the machine at one side.

31. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism arranged as an operative unit and comprising a glue trough and a glue roll arranged to apply adhesive to advanced wrapper sheets, a blank shelf to direct blanks from the blank feed mechanism toward the glue roll, guide ways, and means for moving the trough on the guide ways to operative position and to an inoperative position substantially clear of the machine at one side.

32. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism arranged as an operative unit and comprising a glue trough and a glue roll arranged to apply adhesive to advanced wrapper sheets, strippers for removing glued blanks from the glue roll, guide ways, and means for moving the trough on the guide ways to operative position and to an inoperative position substantially clear of the machine at one side.

33. Article and sheet handling and assembling mechanism comprising means for advancing a series of articles, means for advancing successive wrappers for assembly contact with the articles, gluing mechanism arranged as an operative unit and comprising a glue trough and a glue roll arranged to apply adhesive to advanced wrapper sheets, guide ways, means for moving the trough on the guide ways to operative position and to an inoperative position substantially clear of the machine at one side, and means for continuously driving the glue roll in operative or inoperative positions.

34. A machine of the class described, comprising means for advancing a series of articles, means for supporting a stack of wrappers, means for feeding individual wrappers and applying them in assembly contact with the articles, means for driving the means above mentioned, gluing means for applying glue to the advancing wrapper sheets, and independent driving means for the gluing means.

35. A machine of the class described, comprising means for advancing a series of articles, means for supporting a stack of wrappers, means for feeding individual wrappers

and applying them in assembly contact with the articles, means for driving the means above mentioned, a clutch for said driving means, gluing means for applying glue to advancing wrapper sheets, and independent driving means for the gluing means.

36. A machine of the class described, comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for feeding individual wrappers in similarly spaced relation and applying them in assembly contact with the articles, means for concurrently driving the means above mentioned, gluing means for applying glue to advancing wrapper sheets, and independent driving means for the gluing means.

37. A machine of the class described, comprising means for advancing a spaced series of articles, means for supporting a stack of wrappers, means for feeding individual wrappers in similarly spaced relation and applying them in assembly contact with the articles, means for concurrently driving the means above mentioned, a clutch for said driving means, gluing means for applying glue to advancing wrapper sheets, and independent driving means for the gluing means.

38. Article and sheet handling and assembling mechanism comprising a main article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, an article supply conveyor located below said main conveyor, and an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor.

39. Article and sheet handling and assembling mechanism comprising a main article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, an article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor, and means for driving the elevating conveyor in definite relation to the main conveyor.

40. Article and sheet handling and assembling mechanism comprising a main article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, an article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor, means for driving the elevating conveyor in definite relation to the main conveyor, and means for stopping the elevating conveyor in the absence of articles properly positioned at the delivery point of the supply conveyor.

41. Article and sheet handling and assembling mechanism comprising a main ar-

ticle conveyor, means for advancing and applying sheets to articles advanced by said conveyor, an article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor, means for driving the elevating conveyor in definite relation to the main conveyor, a clutch interposed in the driving line to the elevating conveyor, and clutch operating means comprising a feeler actuated by a package at delivery position on the supply conveyor to release the clutch in the absence of a properly positioned package at the said delivery position.

42. Article and sheet handling and assembling mechanism comprising a main article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, an article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor, and a transfer conveyor to move articles from the delivery point of the elevating conveyor to the main conveyor.

43. Article and sheet handling and assembling mechanism comprising a main horizontal article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, a horizontal article supply conveyor located below said main conveyor, and an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor and concurrently turning said articles.

44. Article and sheet handling and assembling mechanism comprising a main horizontal article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, a horizontal article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor and concurrently turning said articles, and means for driving the elevating conveyor in definite relation to the main conveyor.

45. Article and sheet handling and assembling mechanism comprising a main horizontal article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, a horizontal article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor and concurrently turning said articles, means for driving the elevating conveyor in definite relation to the main conveyor, and means for stopping the elevating conveyor in the absence of properly located articles at the delivery point of the supply conveyor.

46. Article and sheet handling and assembling mechanism comprising a main hori-

zontal article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, a horizontal article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor and concurrently turning said articles, means for driving the elevating conveyor in definite relation to the main conveyor, a clutch interposed in the driving line to the elevating conveyor, and clutch operating means comprising a feeler actuated by a package at delivery position on the supply conveyor to release the clutch upon failure of a package to be properly presented at the said delivery position.

47. Article and sheet handling and assembling mechanism comprising a main horizontal article conveyor, means for advancing and applying sheets to articles advanced by said conveyor, a horizontal article supply conveyor located below said main conveyor, an elevating conveyor for lifting articles from the supply conveyor to the level of the main conveyor and concurrently turning said articles, and a transfer conveyor to move articles from the delivery point of the elevating conveyor to the main conveyor.

48. In article and sheet feeding and assembling mechanism, means for advancing a series of articles, a sheet magazine, means for feeding individual sheets from the magazine and adhesively conditioning and applying them to the articles during advance movement of the sheet and article, a feeler arranged for contact with the articles at a definite point in their advance, and means acting in connection with the feeler in absence of an article to omit the feeding of the sheet corresponding to the article.

49. In article and sheet feeding and assembling mechanism, a conveyor for advancing a spaced series of articles to and past an assembly station, a sheet stack magazine, means for separating individual sheets from the stack and advancing them in spaced relation, means for adhesively conditioning the sheets during advance, means for bringing a sheet in assembly engagement with each article during advance of the sheet and article, a feeler adjacent to the article conveyor and arranged to be acted on by each article at a definite point in its advance anterior to the assembly station, and means actuated by the feeler in absence of an article at said point to omit the feeding of a sheet.

50. In article and sheet feeding and assembling mechanism, a horizontal conveyor for advancing an equally spaced series of articles to and past an assembly station, means for maintaining a stack of sheets, means for separating individual sheets from the stack and advancing them in

spaced relation corresponding to the spacing of the articles, means for bringing a sheet in assembly engagement with each article during advance of the sheet and article, means for adhesively conditioning the sheets during advance to the assembly station, a feeler adjacent to the article conveyor and arranged to be acted on by each article at a definite point in its advance anterior to the assembly station, and means acting in connection with the feeler in absence of an article at said point to omit the feeding of a sheet which would correspond to the absent article.

51. Wrapping mechanism comprising a conveyor for a series of articles, a wrapper stack magazine, means for separating and feeding individual sheets from the stack, said means comprising a member which has a feed movement and a return movement, means for gluing the wrapper sheets during advance, means for bringing a wrapper sheet in assembly engagement with each article during mutual advance movement, a detector arranged to engage the successive articles at a definite point of their movement anterior to the assembly position, and means acting in connection with the detector in the absence of an article from said conveyor at the stated point of location of said detector to render said sheet feed member inoperative during a feed movement to omit the separation and feeding of a wrapper.

52. Wrapping mechanism comprising a conveyor for a series of equally spaced articles, a wrapper stack magazine, means for separating and feeding individual sheets from the top of the stack, said means comprising a pusher which is engaged with the sheet during a feed movement and is held out of contact with the sheet during return movement, means for gluing the wrapper sheets during advance, means for bringing a wrapper sheet in assembly engagement with each article during mutual advance movement, a detector arranged to engage the successive articles at a definite point of their movement anterior to the assembly position, and means acting in connection with the detector to retain said sheet feed element in elevated position during a feed movement and to omit the separation and feeding of a wrapper in the absence of an article from said conveyor at the stated point of location of said detector.

53. A wrapping machine comprising means for forming an assembly consisting of a rectangular carton in registered engagement with one portion of an adhesively coated wrapper, and with a long body portion of the wrapper trailing behind the carton and with wrapper end flaps projecting beyond the ends of the carton, and folding mechanism comprising a rotary turret hav-

ing pockets to receive a succession of assemblies, means for placing the assemblies in the pockets, means for discharging the assemblies, folding and securing mechanism adjacent to the turret, and means for moving the assemblies in diverse lateral directions after discharge from the turret and substantially simultaneously affixing portions of the wrapper.

54. A wrapping machine comprising means for forming an assembly consisting of a rectangular carton in registered engagement with one portion of an adhesively coated wrapper and with a long body portion of the wrapper trailing behind the carton and with wrapper end flaps projecting beyond the ends of the carton, folding mechanism comprising a rotary turret having pockets to receive a succession of assemblies, means for placing the assemblies in the pockets, means for discharging the assemblies, folding and securing mechanisms adjacent to the turret, means for moving the assemblies in diverse lateral directions after discharge from the turret and substantially simultaneously affixing portions of the wrapper, discharge conveyors between which a row of assemblies is moved away from the last folding mechanism, and means for pressing the ends of the assemblies during such movement.

55. A wrapping machine comprising means for forming an assembly consisting of a rectangular carton in registered engagement with one portion of an adhesively coated wrapper and with a long body portion of the wrapper trailing behind the carton and with wrapper end flaps projecting beyond the ends of the carton, folding mechanism comprising a rotary turret having pockets to receive a succession of assemblies, means for intermittently moving the turret, means for placing the assemblies in the pockets, means for discharging the assemblies, folding and securing mechanisms adjacent to the turret, and means for moving the assemblies in diverse lateral directions after discharge from the turret and substantially simultaneously affixing portions of the wrapper.

56. A wrapping machine comprising means for forming an assembly consisting of a rectangular carton in registered engagement with one portion of an adhesively coated wrapper and with a long body portion of the wrapper trailing behind the carton and with wrapper end flaps projecting beyond the ends of the carton, folding mechanism comprising a rotary turret having pockets to receive a succession of assemblies, means for intermittently moving the turret, means for placing the assemblies in the pockets, means for discharging the assemblies, folding and securing mechanisms

- adjacent to the turret, means for moving the assemblies in diverse lateral directions after discharge from the turret and substantially simultaneously affixing portions of the wrapper, discharge conveyors between which a row of assemblies is moved away from the last folding mechanism, and means for pressing the ends of the assemblies during such movement.
57. A wrapping machine comprising parallel horizontal conveyors, oppositely located pushers thereon for advancing an article between the conveyors, means for adhesively conditioning and applying a wrapper to the article during its advance, means for turning up and securing a forwardly projecting marginal portion of the wrapper upon the foremost face of the article, and a pressing abutment against which the foremost side of the article is brought substantially at the point of withdrawal of the pushers from engagement with the article.
58. A wrapping machine comprising parallel horizontal conveyors, oppositely located pushers thereon for advancing an article between the conveyors, means for adhesively conditioning and applying a wrapper to the articles during its advance, means for turning up and securing a forwardly projecting marginal portion of the wrapper upon the foremost face of the article, a pressing abutment against which the foremost side of the article is brought substantially at the point of discharge from said conveyors, and means for exerting yielding pressure by the pushers upon the article to urge it against the pressing abutment substantially at the point of withdrawal of the pushers from engagement with the article.
59. A wrapping machine comprising a magazine for a stack of wrappers, means for separating individual wrapper sheets successively from the stack, advancing them to an assembly position and gluing them during such advance, means for advancing a series of articles in spacing corresponding to the spacing of the wrapper sheets, means for bringing an article in contact with a body section of the adhesive face of a wrapper blank during mutual advance of the blank and article with a marginal portion of the wrapper projecting ahead of the article and a long portion of the wrapper trailing behind the article, means for turning up and securing said projecting wrapper margin on the advancing face of the article, and means located at a series of folding stations for folding and securing body and end portions of the wrapper successively on sides and ends of the article to form a complete tight-wrapped package.
60. A wrapping machine comprising a magazine for a stack of wrappers each comprising a body portion and a plurality of end flaps, means for separating individual wrapper sheets successively from the stack, advancing them to an assembly position and gluing them during such advance, means for advancing a series of articles in spacing corresponding to the spacing of the wrapper sheets, means for bringing an article in contact with a body section of the adhesive face of a wrapper blank during mutual advance of the blank and article, with a marginal portion of the wrapper projecting ahead of the article and a long portion of the wrapper trailing behind the article, means for turning up and securing said projecting wrapper margin on the advancing face of the article, and means located at a series of folding stations for folding and securing body portions and end flaps of the wrapper successively on sides and ends of the article to form a complete tight-wrapped package.
61. In a wrapping machine, a longitudinal conveyor, a rotary blank platen, a pulley adjacent and posterior to the platen, assembly supporting bands passing about the platen and the pulley, and longitudinally traveling assembly supporting and conveying means posterior to the pulley.
62. In a wrapping machine, a longitudinal conveyor, a rotary blank platen, a pulley posterior to the platen, assembly supporting bands passing about the platen and the pulley, assembly supporting and conveying means posterior to the pulley, and assembly supporting and conveying chains passing about the pulley for moving the assembly onward.
63. In a wrapping machine, a longitudinal conveyor, a rotary blank platen, a pulley posterior to the platen, assembly supporting bands passing about the platen and the pulley, means for supporting the upper stretches of the bands, assembly supporting and conveying chains passing about the pulley for moving the assembly onward, and supporting rails beneath the upper stretches of said chains.
64. A wrapping machine comprising a longitudinal assembly conveyor, a rotary blank platen, means for supplying articles to the conveyor, means for supplying gummed blanks to the platen to be associated with the articles to form wrapping assemblies, the blanks having end flaps projecting beyond the ends of the articles, and longitudinal supporting strips to support said projecting wrapper flaps during the assembly advance.
65. A wrapping machine comprising a longitudinal assembly conveyor, a rotary blank platen, means for supplying articles to the conveyor, means for supplying gummed blanks to the platen to be associated with the articles to form wrapping assemblies, the blanks having end flaps projecting

beyond the ends of the articles, means for supporting the assembly during its advance, and longitudinal supporting strips to support said projecting wrapper flaps during the assembly advance.

66. In package wrapping or handling mechanism, a rotatable turret having package pockets, a package conveyor, a package support positioned to receive successive packages from the conveyor, the support having members arranged to straddle the turret and support the packages near the ends thereof, and means for moving the support to deposit the package in a turret pocket.

67. In package wrapping or handling mechanism, a rotatable turret having package pockets, a package conveyor, a package support positioned to receive successive packages from the conveyor, a package pusher normally arranged for the positioning of a package between it and said support, means for moving the support and pusher to carry the package positively into a turret pocket and to support the package during such movement, and means for returning the support and pusher to normal position, the support having members arranged to engage the package near the ends thereof and to straddle the turret so that the package is removed from the supporting members by advance of the turret before return movement of the support.

68. In wrapping mechanism, a rotatable turret having package pockets, a longitudinal package conveyor, a package support positioned to receive successive packages from the conveyor, the support having members arranged to straddle the turret and support the packages near the ends thereof, and means for moving the support at substantially a right-angle in relation to the conveyor to deposit the package in a turret pocket.

69. In wrapping mechanism, a rotatable turret having package pockets, a longitudinal package conveyor, a package support positioned to receive successive packages from the conveyor, a package pusher normally arranged for the positioning of a package between it and said support, means for moving the support and pusher to carry the package positively into a turret pocket and to support the package positively during such movement, and means for returning the support and pusher to normal position, the support having members arranged to engage the package near the ends thereof and to straddle the turret so that the package is removed from the supporting members by advance of the turret before return movement of the support.

70. In a wrapping machine, a rotary turret having a series of pockets each adapted to receive and advance an assembly consisting of an article and a wrapper while

wrapper-folding operations are performed thereon, a conveyor for advancing successive assemblies, an assembly support positioned to receive each assembly from the conveyor and having members engaging below the article near the ends thereof to positively support it, a vertical guideway for the support, means for moving the support downward to carry the article into one of the turret pockets with the supporting members straddling the turret adjacent to the pocket, and means for returning the support to normal position after turret movement.

71. In a wrapping machine, a rotary turret having a series of pockets each adapted to receive and advance an assembly consisting of an article and a wrapper while wrapper-folding operations are performed thereon, a conveyor for advancing successive assemblies, an assembly support positioned to receive each assembly from the conveyor and having members engaging below the article near the ends thereof to positively support it, a vertical guideway for the support, means for moving the support downward to carry the article into one of the turret pockets with the supporting members straddling the turret adjacent to the pocket, means for returning the support to normal position after turret movement, a pusher normally positioned above the support close to the top of the article delivered on the support by the conveyor, and means for moving the pusher downward concurrently with the support to positively carry the assembly into the turret pocket.

72. In a wrapping machine, a rotary turret having a series of pockets each adapted to receive and advance an assembly consisting of an article and a wrapper while wrapper folding or forming operations are performed thereon, a longitudinal conveyor above the turret for advancing successive assemblies, an assembly support positioned to receive each assembly from the conveyor and having members engaging below the article near the ends thereof to positively support it, a vertical guideway for the support, means for moving the support downward to carry the article into one of the turret pockets with the supporting members straddling the turret adjacent to the pocket, and means for returning the support to normal position after turret movement.

73. In a wrapping machine, a rotary turret having a series of pockets each adapted to receive and advance an assembly consisting of an article and a wrapper while wrapper folding or forming operations are performed thereon, a longitudinal conveyor above the turret for advancing successive assemblies, an assembly support positioned to receive each assembly from the conveyor and having members engaging below the

article near the ends thereof to positively support it, a vertical guideway for the support, means for moving the support downward to carry the article into one of the turret pockets with the supporting members straddling the turret adjacent to the pocket, means for returning the support to normal position after turret movement, a pusher normally positioned above the support close to the top of the article delivered on the support by the conveyor, and means for moving the pusher downward concurrently with the support to positively carry the assembly into the turret pocket.

74. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article, means for turning and securing said wrapper part upon an adjacent side of the article to secure the wrapper in registered contact with the article during advance of the assembly to an initial wrapping position, and means for exerting pressure upon the article to maintain it in contact with the wrapper during substantially the entire travel of the assembly from the point of assembly contact to the initial wrapping position.

75. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article, means for carrying the article and wrapper away from the point of assembly contact, means operating during such travel of the assembly to turn and secure said projecting wrapper part upon an adjacent surface of the article and thus retain the wrapper in registered position prior to the principal wrapping operations, and means for exerting pressure upon the article to maintain it in contact with the wrapper during substantially the entire travel of the assembly from the point of assembly contact to the initial wrapping position.

76. Wrapping mechanism comprising means for advancing an article, means for advancing and adhesively coating one side of a wrapper, means for moving the article into assembly contact with a pre-determined part of the coated wrapper surface with a part of the wrapper projecting beyond the article in the opposite direction, means for moving the assembly article and wrapper from assembly position to an initial wrapping position, means acting during such movement to turn and secure one of said wrapper parts against an adjacent face of

the article, and means for exerting pressure upon the article to maintain it in contact with the wrapper during substantially the entire travel of the assembly from the point of assembly contact to the initial wrapping position.

77. A wrapping machine comprising means for bringing successive articles and wrappers in assembly contact, wrapping means including an intermittently rotating turret having pockets to receive successive assemblies, means for advancing the successive assemblies from the point of assembly contact to a movable support for positively supporting the assemblies adjacent to the turret, and means for moving the support with an assembly to deposit the assembly in a turret pocket, the support and the turret being constructed and arranged to permit movement of the turret while the support is in depressed position, and return of the support to normal position during turret movement and as soon as the assembly has been advanced clear of the support.

78. A wrapping machine comprising means for bringing successive articles and wrappers in assembly contact, wrapping means including an intermittently rotating turret having pockets to receive successive assemblies, means for advancing the successive assemblies from the point of assembly contact to a movable support for positively supporting the assemblies adjacent to the turret, and means for moving the support with an assembly to deposit the assembly in a turret pocket, the support and the turret being constructed and arranged to permit movement of the turret while the support is in depressed position, and return of the support to normal position during turret movement and as soon as the assembly has been advanced clear of the support, an assembly pusher normally located to receive an assembly between it and said support, and means for moving the pusher along with the support to positively move the assembly into the turret pocket.

79. A method of handling and associating articles and sheets, comprising advancing and adhesively coating a sheet, advancing and bringing an article in contact with an accurately determined part of the adhesive sheet surface during concurrent advance of the sheet and article, with a part of the sheet extending beyond the article, and folding and securing said sheet part to an adjacent face of the article during concurrent advance of the associated sheet and article away from the point of assembly contact toward an initial wrapping position, and folding and securing additional portions of the sheet successively in adherent surface contact with the article.

80. Mechanism of the class described, comprising means for advancing an article,

means for advancing and adhesively coating one face of a sheet, means for moving the article into assembly contact with a predetermined part of the coated sheet surface
5 with a part of the sheet projecting beyond the article, and means for turning and securing said sheet part upon an adjacent side of the article to secure the sheet in registered contact with the article during advance of
10 the assembly toward the initial station of wrapping mechanism wherein additional operations are performed to fold and secure portions of the sheet to the article.
81. Mechanism of the class described
15 comprising means for producing an assem-

bly consisting of an adhesively coated flexible sheet and an article in registered contact with a portion of the adhesive sheet surface, and with a portion of the sheet extending beyond the article, means for advancing the assembly to an initial sheet folding position, and means acting during such advance to turn and secure said extending sheet portion against an adjacent face of the article. 20

Signed at Philadelphia in the county of Philadelphia and State of Pennsylvania, this 23rd day of August A. D. 1922. 25

WILLIAM A. WEIGHTMAN.
CHARLES H. NITSCH.