Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 1

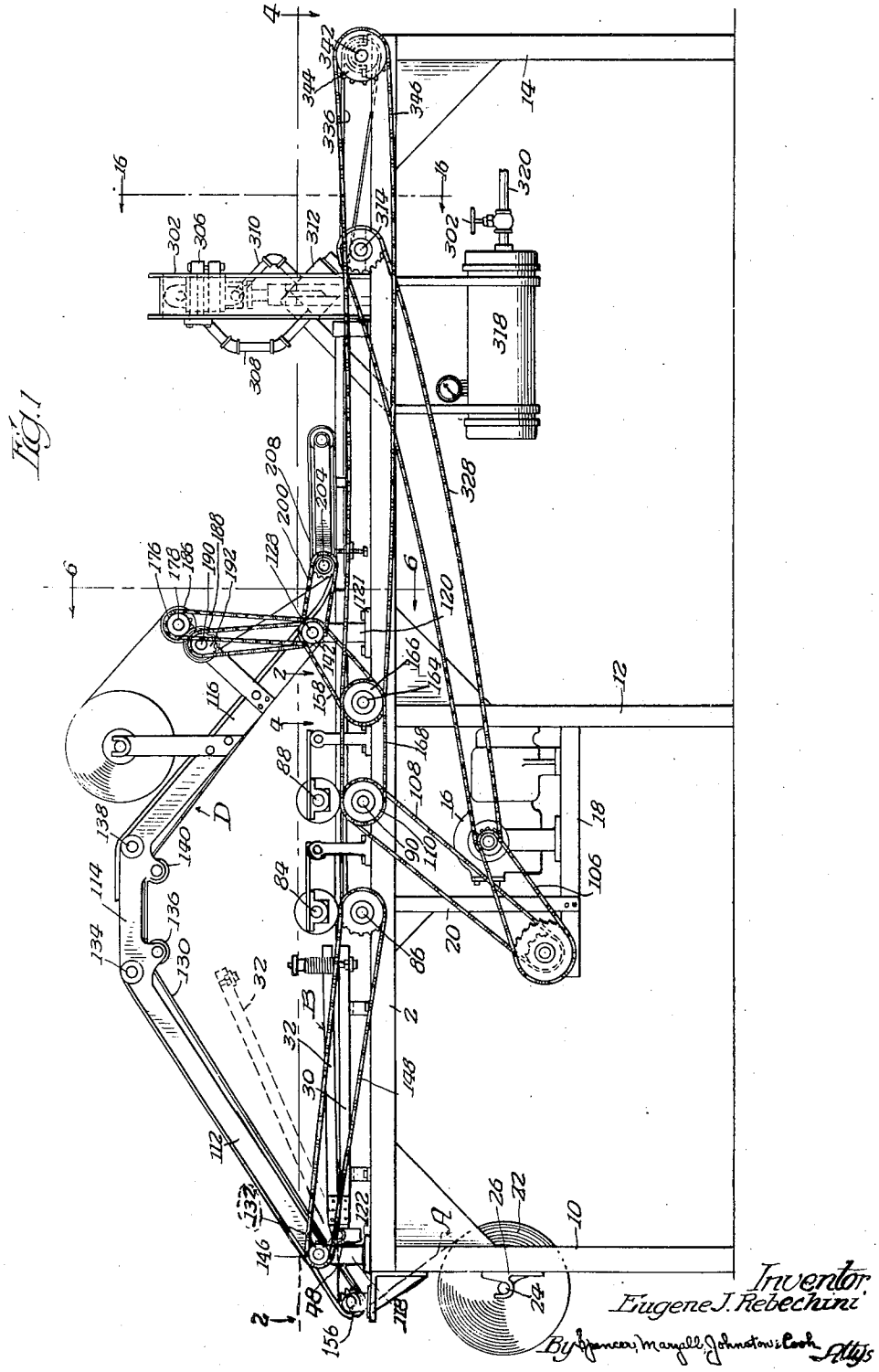


Fig. 1

Inventor
Eugene J. Rebechini
By Spencer, Marvell, Johnston & Cook Attys

Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 2

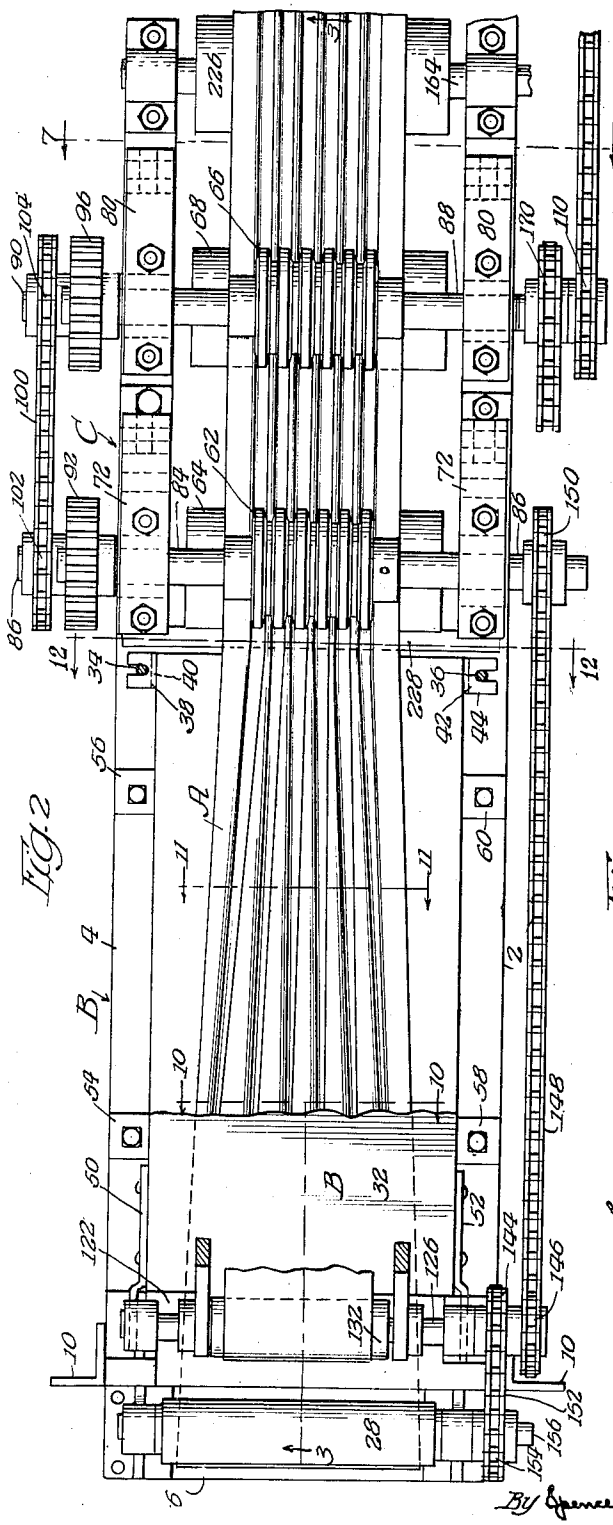


FIG. 2

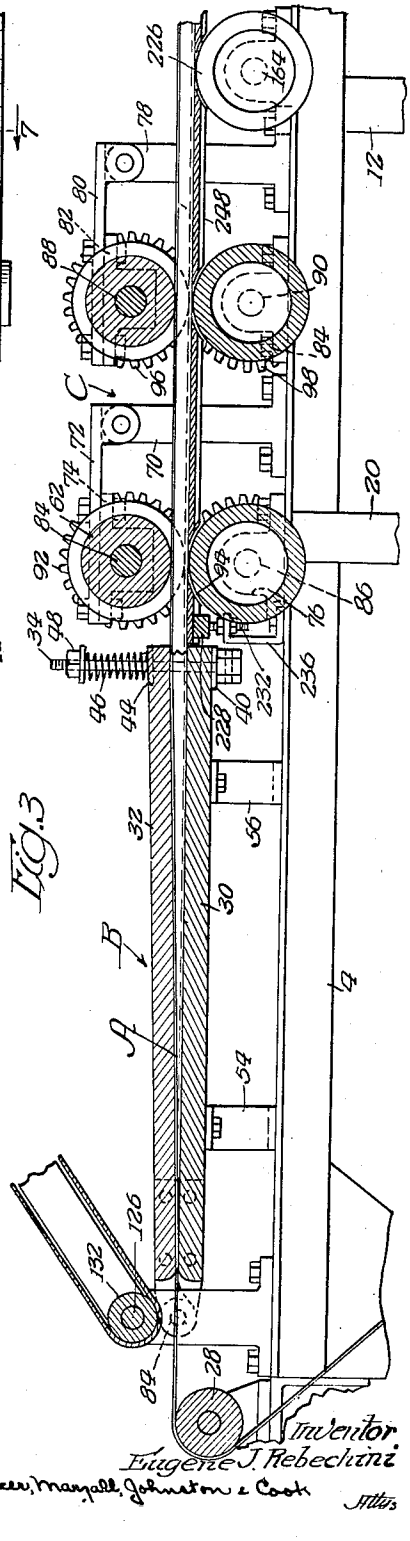


FIG. 3

Inventor
Eugene J. Rebechini
By Spencer, Marshall, Johnston & Cook
Attys

Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 3

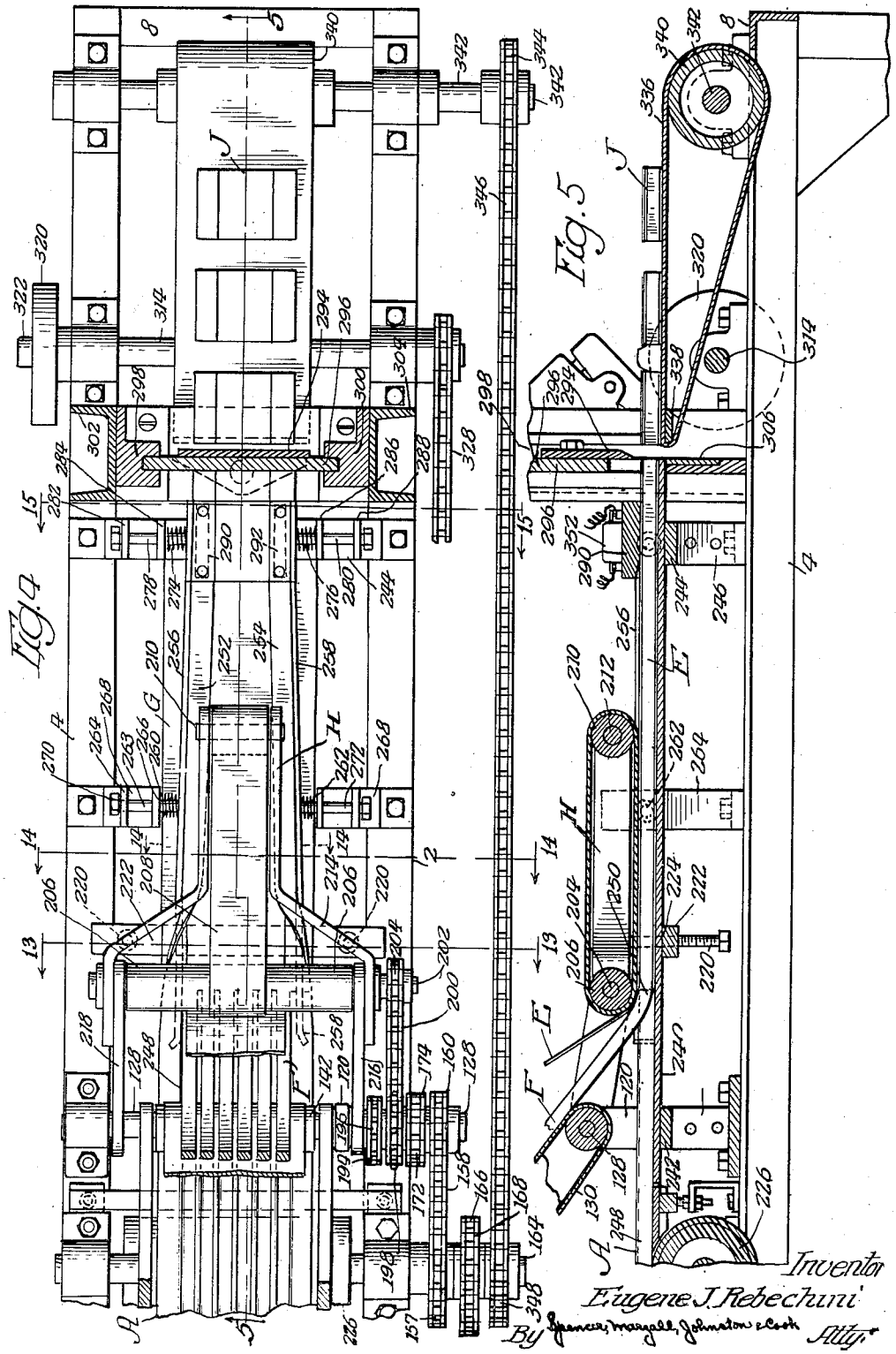


Fig. 4

Fig. 5

Inventor
Eugene J. Rebechini
By Spencer, Marsall, Johnston & Cook Attys.

Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 4

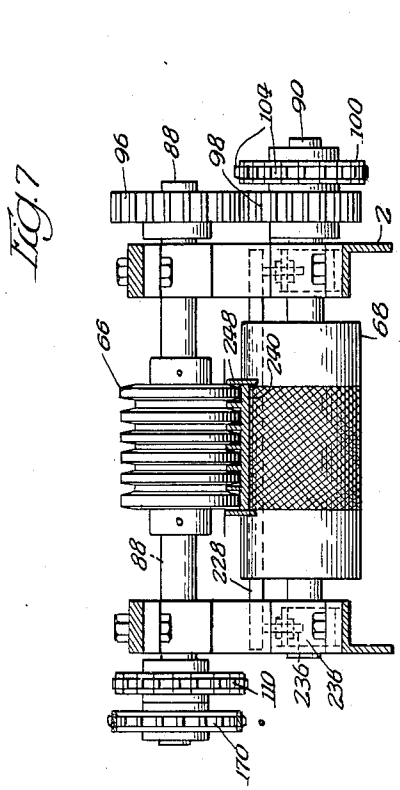


FIG. 7

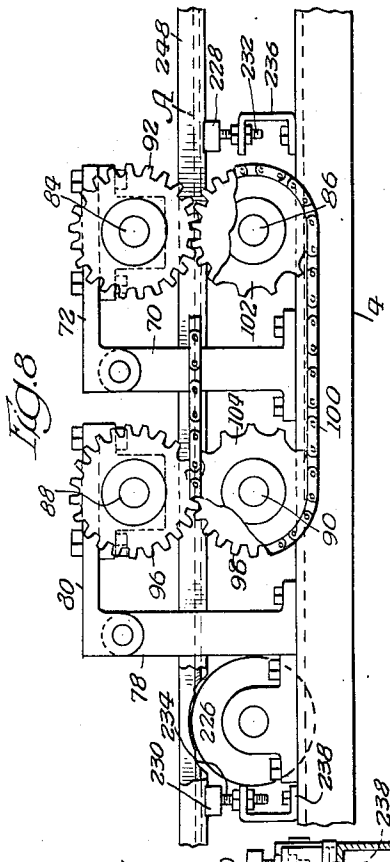


FIG. 8

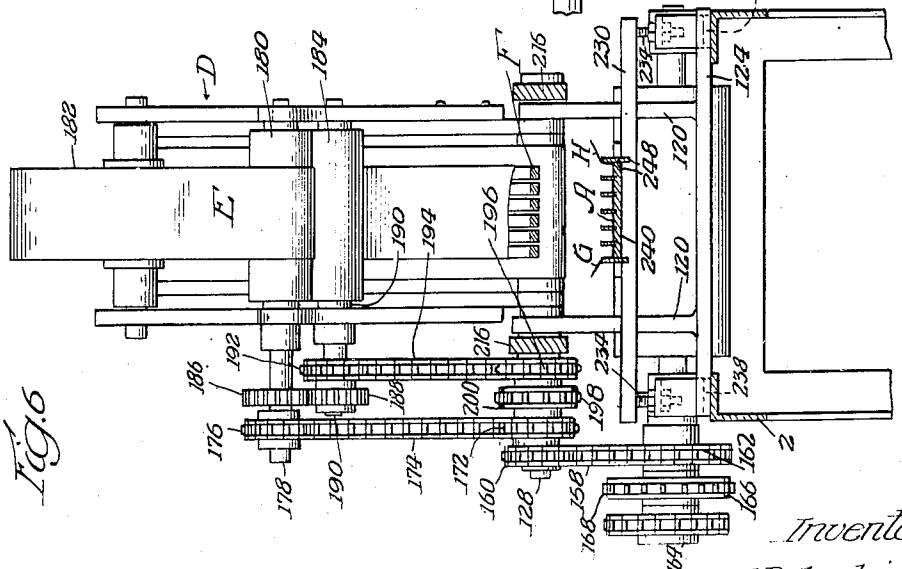


FIG. 6

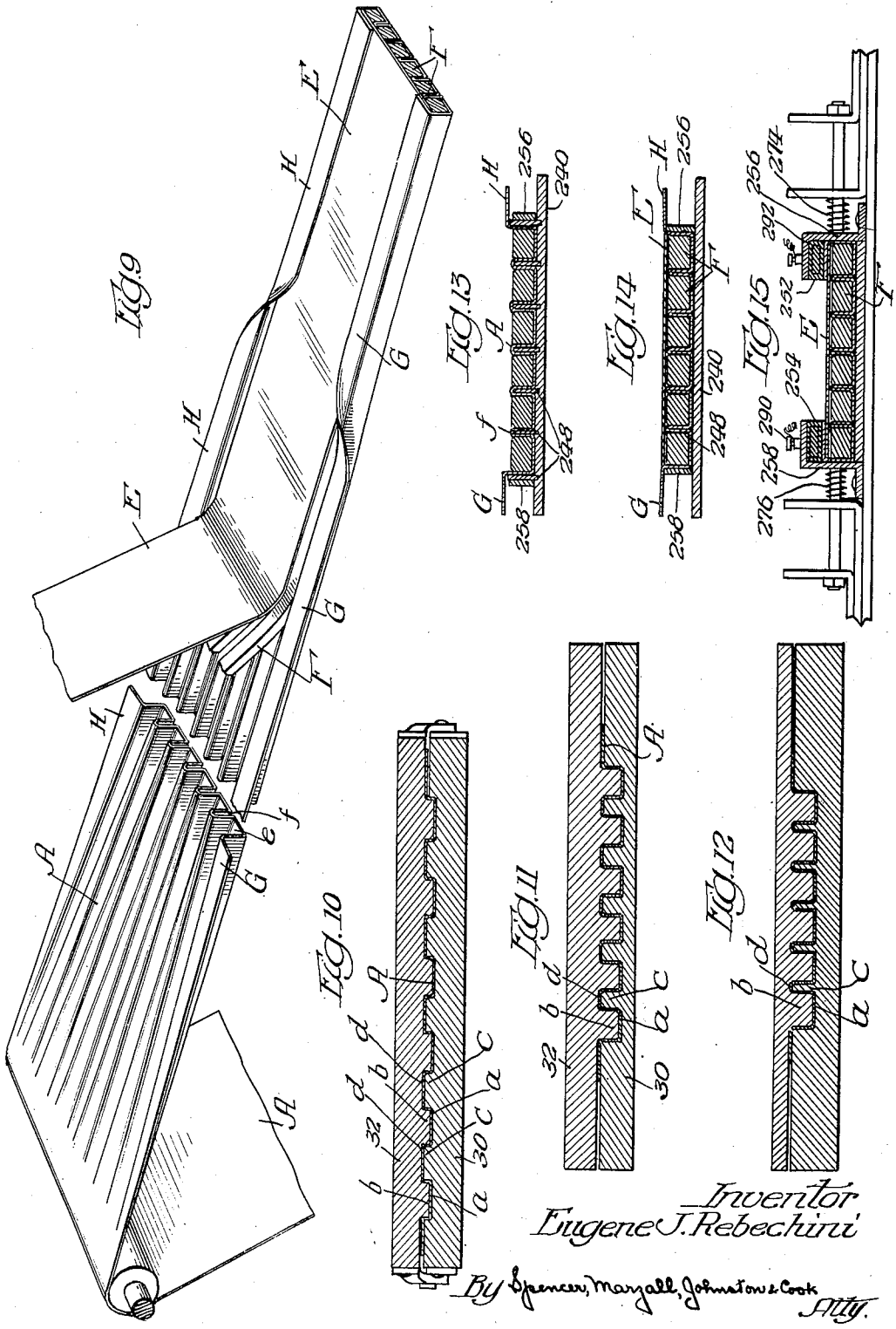
Inventor
Eugene J. Rebechini

By Spencer, Marzall, Johnston & Cook Attys

Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 5



Inventor
Eugene J. Rebechini

By Spencer, Marzall, Johnston & Cook
Atty.

Sept. 11, 1945. E. J. REBECHINI 2,384,492

METHOD AND APPARATUS FOR PACKAGING

Filed Sept. 6, 1943 6 Sheets-Sheet 6

FIG. 17

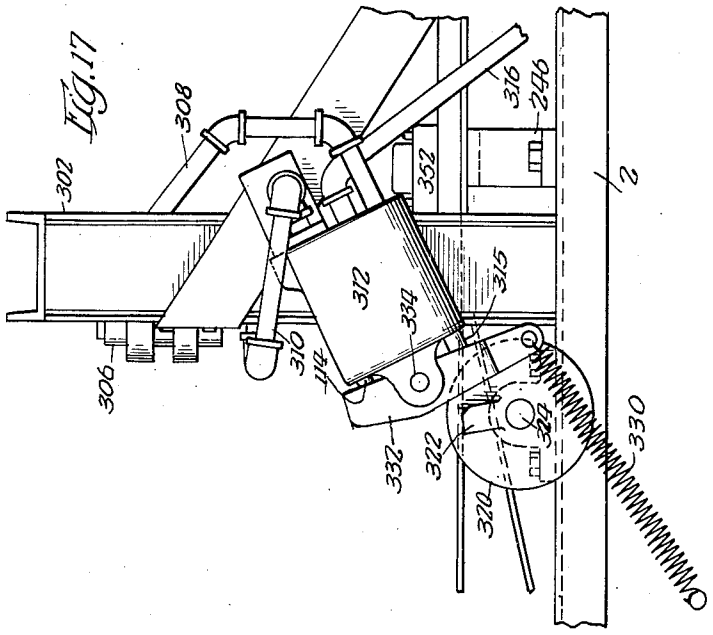
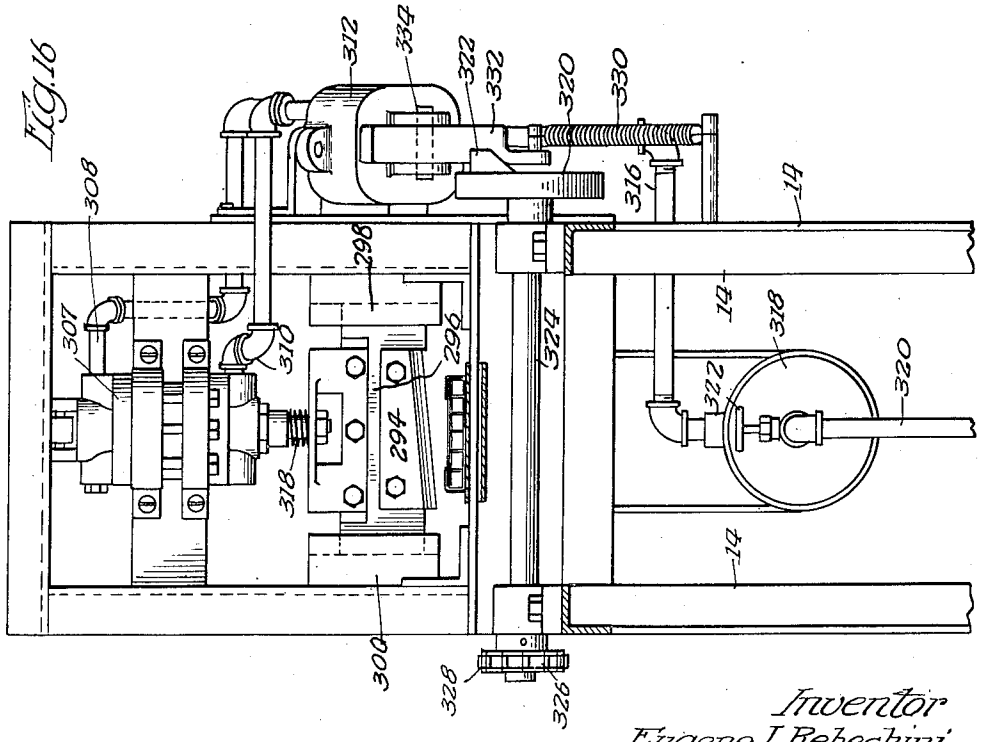


FIG. 16



Inventor
Eugene J. Rebechini

By Spencer, Marshall, Johnston, & Cook
Atty.

Patented Sept. 11, 1945

2,384,492

UNITED STATES PATENT OFFICE

2,384,492

METHOD AND APPARATUS FOR PACKAGING

Eugene J. Rebechini, Chicago, Ill., assignor, by mesne assignments, to Schutter Candy Company, Chicago, Ill., a corporation of Delaware

Application September 6, 1943, Serial No. 501,421

12 Claims. (Cl. 93—3)

This invention relates to a method and apparatus for packaging, and more particularly to a method and apparatus suitable for packaging articles of confection, such as candy and the like. The invention further relates to a new type of package.

One of the objects of the invention is to provide a new and improved method and a new and improved apparatus for packaging articles and especially for packaging articles of food, such as candy.

Another object of the invention is to provide a method and apparatus for packaging articles of the type described automatically with a minimum amount of handling.

A further object of the invention is to provide a new and improved method and apparatus for packaging articles of the type described in such a way that the articles are individually separated from each other within the package.

Another object of the invention is to provide a new and improved method and apparatus for packaging articles of the type described in a non-interrupted or continuous manner using a continuous strip of packaging material fed from a roll.

An additional object of the invention is to provide a new and improved type of package or packaged article.

A more specific object of the invention is to provide a method and apparatus for packaging articles by plaiting or crimping the end of a continuous strip of flexible sheet material, such as paper, to form longitudinal grooves or channels therein, then feeding or inserting continuous strips of the article into the grooves or channels, completing formation of the package in continuous strip form, and severing the packaged article of predetermined size from the end of the strip.

Other objects and advantages of the invention will be apparent by reference to the following description thereof in conjunction with the accompanying drawings in which:

Fig. 1 is an elevational view of one form of apparatus which can be employed to practice the invention;

Fig. 2 is an enlarged plan section of one part of the apparatus shown in Fig. 1 taken along the line 2—2 of Fig. 1;

Fig. 3 is a vertical section taken along the line 3—3 of Fig. 2;

Fig. 4 is an enlarged plan section of the machine or apparatus shown in Fig. 1 taken along the line 4—4 of Fig. 1, with parts broken away;

Fig. 5 is a vertical section taken along the line 5—5 of Fig. 4;

Fig. 6 is a vertical section taken along the line 6—6 of Fig. 1;

Fig. 7 is a vertical section taken along the line 7—7 of Fig. 2;

Fig. 8 is an elevational view of a portion of the apparatus shown in Fig. 2 looking in the opposite direction from the view illustrated in Fig. 3;

Fig. 9 is a perspective view illustrating the manner in which the paper or other flexible sheet material is plaited, the article inserted and the package formed;

Fig. 10 is a vertical sectional view taken along the line 10—10 of Fig. 2;

Fig. 11 is a vertical sectional view taken along the line 11—11 of Fig. 2;

Fig. 12 is a vertical sectional view taken along the line 12—12 of Fig. 2;

Fig. 13 is a vertical sectional view taken along the line 13—13 of Fig. 4;

Fig. 14 is a vertical sectional view taken along the line 14—14 of Fig. 4;

Fig. 15 is a vertical sectional view taken along the line 15—15 of Fig. 4;

Fig. 16 is a vertical sectional view taken along the line 16—16 of Fig. 1; and

Fig. 17 is a side view of the severing mechanism shown in Fig. 16.

As will be observed, Figs. 9 to 15 are for the purpose of illustrating the method of forming the package and apparatus details which are unnecessary for this purpose are omitted. It will be noted further that Figs. 4 and 5 are substantially continuations of Figs. 2 and 3, respectively. As will be further understood the apparatus shown represents only one form of apparatus which can be used for practicing the invention, and the structural details thereof may be varied without departing from the invention.

Referring to Figs. 1 to 5 inclusive, the apparatus shown comprises a pair of horizontal frame members 2 and 4 held together at the ends by transverse frame members 6 (Fig. 2) and 8 (Fig. 4) and supported from beneath by spaced pairs of frame supporting members 10—10, 12—12 and 14—14. A motor 16, or other suitable power means, is supported by auxiliary frame members generally shown at 18 and 20 in Fig. 1.

A roll 22 of paper or other suitable packaging material is rotatably supported on a shaft 24 freely engaged at either end by supporting members 26 attached to frame members 10, 10 as generally illustrated in Fig. 1. From the roll 22 a strip A of the paper, or other packaging mate-

rial, is fed upwardly over a roller 28, as can best be seen by reference to Fig. 3, and then passes into the plaiting or crimping mechanism generally shown at B. This mechanism constitutes an important part of the invention and comprises a pair of folding or plaiting elements 30 and 32 having complementary grooves, or corrugations therein, which are preferably contoured in a particular way, as will be more fully described hereinafter. The elements 30 and 32 are resiliently held in contact with the strip A on either side thereof by bolts 34 and 36, which pass through brackets or projections generally shown at 38, 40, 42 and 44 in Figs. 2 and 3. As will be observed, the brackets 40 and 42 are fastened to the lower member 30 and the brackets 38 and 44 are fastened to the upper member 32 and are slotted so that the members 30 and 32 may be readily disengaged from each other merely by moving the bolts 34 and 36 outwardly. While the members 30 and 32 are engaged in the manner shown in Fig. 3, springs 46, 46, held under compression by nuts 48, 48 causes the paper strip A to be held resiliently between said members. When the members 30 and 32 are disengaged in the manner previously described, the member 32 may be raised, e. g. as shown in dotted lines in Fig. 1, about the hinge 48 to which it is fastened, by means of hinge members 50 and 52. The lower plaiting member 30 is fixedly attached to the frame members 2 and 4 by means of the supporting members 54, 56, 58 and 60.

The paper strip A is fed or pulled from the continuous roll 22 by two pairs of feed rollers 62, 64, and 66, 68, as shown in Fig. 2 and as illustrated in more detail by Fig. 7. The upper feed rolls 62 and 66 are provided with projections and recesses adapted to fit into the channels and over the plaits previously formed by the plaiting mechanism B. Thus the plaits and grooves of strip A are preserved by the feed rollers and set in their predetermined shape. The lower feed rollers 64 and 68 preferably have a resilient surface (as for example, rubber or fabric) in order to prevent slippage of the paper.

The feeding mechanism, as generally shown at C in Figs. 2 and 3, comprises a series of supporting members, arms or brackets mounted on the frame members 2 and 4 and generally indicated by the numerals 70, 72, 74, 76, 78, 80, 82, and 84 in Fig. 3. It will be understood that a corresponding set of members is provided on the opposite side of the machine. The feed roll 62 is keyed to shaft 84, the feed roll 64 is keyed to shaft 86, the feed roll 66 is keyed to shaft 88 and the feed roll 68 is keyed to shaft 90. The feed rolls 62 and 64 are drivingly connected to each other by means of a pair of gears 92 and 94 mounted on the shafts 84 and 86, respectively, and the feed rolls 66 and 68 are drivingly connected to each other by means of a pair of gears 96 and 98 mounted on the shafts 88 and 90, respectively. The two pairs of feed rolls are further synchronized with each other by a driving connection comprising a chain 100 mounted on a pair of sprockets 102 and 104, which in turn are keyed to the shafts 86 and 90, respectively.

Power is supplied to the feeding mechanism C from the motor 16, as shown in Fig. 1, through a chain drive 106 which in turn is drivingly connected to another chain drive 108. Chain drive 108 is drivingly connected to the shaft 88 through a sprocket 110, as shown in Figs. 2 and 7.

From the feeding mechanism C the plaited paper strip is fed forwardly to the article delivery mechanism, generally shown at D and which can best be seen by reference to Figs. 1 and 6. As illustrated, the article delivery mechanism has an elevated frame comprising a pair of oppositely disposed members each including an oblique member 112, a substantially horizontal member 114 and another oblique member 116. These members are preferably welded together and form an integral unit. Two pairs of upright supporting members 118, 118 and 120, 120 are mounted on transverse frame members 122 and 124, which in turn are supported by the longitudinal frame members 2 and 4. A shaft 126 extends through suitable bearings in one end of frame members 118, 118 and another shaft 128 extends through suitable bearings in one end of frame members 120, 120. The arms 112, 112 and 116, 116 are provided at their ends with bearing surfaces and are mounted respectively on the shafts 126 and 128 or, if desired, may be affixed directly to the upright supporting members 118, 118 and 120, 120. A belt conveyor 130 is mounted on the article feeding mechanism D and passes over and between a series of rollers generally indicated at 132, 134, 136, 138, 140 and 142 in Fig. 1. The roller 132 is keyed to shaft 126, which in turn is keyed to sprockets 144 and 146, as shown in Fig. 2. Sprocket 146 is drivingly connected by a chain 148 to another sprocket 150, which in turn is keyed to shaft 86. Shaft 86 is driven by the feed mechanism drive in the manner previously described. Thus the movement of the belt conveyor 130 is synchronized with the movement of the feeding mechanism A.

The sprocket 144 is drivingly connected through a chain 152 to a sprocket 154, which is keyed to shaft 156, which in turn drives roller 28 and assists in feeding the paper strip A. The roller 28 can also be an idler roller.

The endless belt 130 is also driven from roller 142 mounted on shaft 128, which is driven by a chain drive 158 from suitable sprocket drive means 160 keyed to shaft 128 and 162 keyed to shaft 164 (see Fig. 4). Shaft 164 is drivingly connected by means of sprocket 166 and chain 168 to a sprocket 170 affixed to shaft 90 (see Fig. 2). The shaft 90 is driven as a part of the feed drive mechanism C in the manner previously described and hence the rotation of roller 142 is also synchronized with the rotation of the feed drive.

Referring to Fig. 6, it will be seen that a sprocket 172 is keyed to shaft 128 and is connected by means of a chain 174 to a sprocket 176 keyed to shaft 178, which in turn drives paper feed roller 180. The auxiliary paper strip E, which is to form the top of the package, is fed downwardly from roll of paper 182 between feed roller 180 and feed roller 184; the latter being driven from feed roller 180 by a pinion or gear 186 keyed to shaft 178 and meshing with a pinion or gear 188 keyed to shaft 190. A sprocket 192 keyed to shaft 190 is connected by means of a chain 194 to a sprocket 196 keyed to shaft 128 and serves as a supplemental driving connection for the roller 184.

Since shaft 128 is driven from the feed roll drive mechanism C, the forward movements of paper strips A and E are synchronized.

Mounted on shaft 128 is a sprocket 198, which is drivingly connected by means of a chain 200, or other suitable means, to a sprocket 202 keyed to shaft 204 (see Figs. 1 and 4). Roller 206 is fixed to shaft 204 and drives endless belt 208.

Referring to Fig. 5, it will be observed that after

the candy strips F, or other articles in strip form, are fed downwardly by endless belt 130, they pass into grooves or channels in the paper strip A formed by the plaiting mechanism B, previously described, and the paper strip E is fed on top of the articles F with the assistance of the endless belt 208. The endless belt 208 is also supported by an idler roller 210 mounted on a shaft 212. The shaft 212 is supported at either end by a Y-shaped frame member or yoke 214 freely mounted on shaft 204. Shaft 204 is freely supported by arms 216 and 218 (see Fig. 4), which are freely mounted at the other end on shaft 12[illegible]

As will be apparent, the entire endless belt 208 and its driving mechanism may be moved upwardly around shaft 128 or shaft 204, or both. The height of the endless belt 208, with respect to the article F and paper strip A, can be adjusted by set screws 220, 220 carried by transverse member 222 and provided with locknuts 224, 224.

The paper strip A is partially assisted in its forward movement by a roll 226 mounted on shaft 164 and preferably having a relatively rough surface for frictional engagement. During its forward movement paper strip A is supported by cross bars 228 and 230 (see Fig. 8) which are adjustably fastened to the frame members 2 and 4 by bolts 232, 232 and 234, 234 in brackets 236, 236 and 238, 238.

Referring to Fig. 5, after the paper strip A passes beyond the roller 222, it is supported by a plate 240, which is likewise affixed to the frame members 2 and 4 in any suitable manner; for example, by means of a transverse supporting member 242 attached to upright frame members 120. The other end of the plate 240 is supported by transverse member 244 and upright members 246, 246 from the longitudinal frame members 2 and 4.

The longitudinally disposed spacer members 248 are continuations of the sides of the grooves of the plaiting mechanism A and are provided to assist in maintaining the grooved or corrugated cross-sectional shape of the paper strip A.

The ribs or spacer members 248 are imbedded in cross bars 228 and 230 and are cut away over rollers 64, 68 and 226. They taper downwardly and terminate beneath roller 206 at point 250.

After the strips of candy. or other article F, have been fed into the grooves or channels in the paper A, as shown in Fig. 5, and the top strip of paper E has been applied and pressed into place by means of the endless belt 208, the continuous package thus formed passes beyond the upright spacing members 248 at point 250, as described. Just beyond the end of the endless belt 208 the marginal edges G and H of the paper sheet are folded over the top of the package by any suitable means, as for example by means of folders 252 and 254.

The sides of the package are pressed together by the strips 256 and 258, as shown in Fig. 4. The strips 256 and 258 are spring pressed toward each other by means of springs 260 and 262, respectively, and overlap at one end the outer spacer ribs 248, as shown in Fig. 4. The spring 260 is mounted around a bolt 263 which passes through a pair of supporting members 264 and 266. The supporting members 264 and 266 in turn are fixed to a transverse supporting member 268, which is fastened by means of bolts or other suitable means to frame members 2 and 4. The bolt 262 is fastened at one end to the side bar 256 and is provided at the other end with a nut 270 to adjust the tension or pressure of spring 260, which is to be exerted against the sides of the package.

The spring 262 is similarly mounted on bolt 272 on the opposite side of the machine and causes the side member 258 to exert pressure against the opposite side of the package, thereby decreasing the width of the package. In a like manner pressure is also applied against the side members 256 and 258 by springs 274 and 276 which are mounted on bolts 278 and 280, respectively. The bolts 278 and 280 are supported by vertically disposed members 282, 284 and 286, 288, respectively, which in turn are supported from transverse member 244 and vertical members 246 attached to longitudinal frame members 2 and 4.

A pair of heating elements 290 and 292 are provided above the folding members 252 and 254 to iron or heat-seal the turned over edges G and H of the paper strip A to the top strip E. Heat can also be supplied in any suitable manner to seal the tips of the corrugations within the package to the inside of the top strip E. One or both surfaces of the materials to be joined may be waxed in order to effect heat sealing by melting the wax coating, or the packaging materials may be made of cellulose acetate or other thermoplastic material of a type suitable for heat sealing.

The continuous package is then severed into a plurality of packages of predetermined size. This can be accomplished in any suitable manner, but is preferably done in such a way that the continuous movement of the packaged material is not substantially interrupted. One method for accomplishing the severing operation is illustrated in the drawings and comprises a vertically reciprocatable knife 294 mounted on a slide block 296 guided by two guide blocks 298 and 300 which are fixed to the inside or upright frame members 302 and 304. A suitable cooperating knife surface 306 is provided beneath the package to cooperate with the knife blade 294. The knife blade 294 is set at an angle, as shown in Fig. 16, and is actuated in a practically instantaneous manner by any suitable mechanism.

Referring to Figs. 16 and 17, one type of mechanism which can be used to actuate the knife blade 294 comprises a double acting piston unit 307 of a conventional type (e. g. "Hopkins," style 2, nonrotating double acting air cylinder cushioned, made by Tompkins-Johnson Co., Jackson, Michigan, U. S. A.) having means comprising conduits 308 and 310 at the opposite ends thereof to introduce fluid pressure, such as compressed air. The introduction of the fluid pressure is controlled by a conventional type of valve 312 (e. g. Ross four-way cam operated valve made by Ross Operating Valve Company, Detroit, Michigan) which is provided with four ports capable of being opened and closed by valve stems generally shown at 314 and 315. Fluid pressure is supplied to the valve 312 through conduit 316 from a compression chamber 318. The fluid under pressure is introduced into the pressure chamber 318 from a conduit 320 controlled by a valve 322. The arrangement of ports within the valve 312 is conventional and includes an intake port opening to line 316, a port to line 308, a port to line 310 and an exhaust port.

Suitable springs in the valve unit 312 normally hold the valve stem 314 in, and thereby normally prevent the flow of fluid through line 308 and thus keep the knife 296 in its up-position.

Upon the actuation of a suitable actuating means hereinafter described, fluid pressure is caused to flow through the conduits 308 and 310 alternately; that is to say, for example, when the valve stem at 314 is moved outwardly, communication is established by means of suitable

ports in the valve 312 between the pressure line 316 and conduit 308 and at the same time air in the opposite cylinder is exhausted as the piston in cylinder 306 makes one stroke. This causes the knife 294 to move downwardly very rapidly and in fact instantaneously, thereby successively severing packages J, as illustrated in Figs. 4 and 5. A spring 318 is provided as a shock absorber for the knife elements.

The means for actuating the valve stem 314 comprise a cam 320 provided with a cam element 322. The cam is fixed to a shaft 324 to which is keyed a sprocket 326 driven by a chain 328. Chain 328 is driven directly from a suitable sprocket drivingly connected to the motor 16, as shown in Fig. 1. The cutting mechanism operates in timed relationship and in synchronism with the movement of the continuous packaged article. A spring 330 is provided to assist the return of the valve to its normal position after movement of the actuating element 332 by the cam element 322. As will be observed, the rocker arm 332 is pivoted at point 334. When the cam element 322 strikes the rocker arm 332, the latter rocks, pulling the valve stem at 314 out and pushing the valve stem 315 inwardly. As soon as the cam element 322 rotates beyond the rocker arm 332, the latter is restored to its normal position by the springs associated with valve unit 312 with the assistance of spring 330. This opens the valve port to conduit 310 and restores the knife 296 to its up-position.

Referring to Figs. 4 and 5 it will be observed that an endless belt 336 is provided to remove the severed packages J from the cutting knife 294. The endless belt 336 is carried at one end over a suitable transverse blade member 338 and at the other end by a roller 340 fixed to a shaft 342 driven from a sprocket 344 by a chain 346, which in turn is drivingly connected to a sprocket 348 keyed to shaft 164. The shaft 164 is driven in the manner previously described. Thus, the endless belt 336 is in synchronism with the various other moving parts of the apparatus.

The method of operation may best be understood by reference to Figs. 9 to 15 inclusive. As shown in Fig. 9, the strip of paper A, or other suitable packaging material, is fed continuously from a roll 22 (see Fig. 1) and passes through the plaiting mechanism B, previously described. In the plaiting mechanism the continuous strip of paper A is passed between a pair of members 30 and 32 having alternate complemental laterally disposed grooves and projections running longitudinally and generally converging toward each other. As illustrated in Fig. 10, the lower member 30 is provided with a recess *a* and the upper member 32 with a complemental projection *b*. These recesses and projections *a* and *b* are separated from each other by complemental projections and recesses *c* and *d* in the members 30 and 32 respectively.

As the paper strip A advances the projections and recesses *c* and *d* become deeper and narrower in cross-section, as illustrated in Fig. 11, and finally assume the contours shown in Fig. 12, at which point the paper strip A is ready to leave the crimping mechanism. At this point the paper strip A has a plurality of grooved or recessed portions *e* separated by plaits or folds *f*, as shown in Fig. 9. The paper strip A also has marginal areas G and H, previously referred to. It is then drawn through the feed roller mechanism C, previously described, the projecting portions of the upper feed rollers 62 and 66 traveling in the grooves *e* of the paper strip A and feeding the paper forwardly to the article delivery mechanism D, previously described, where the article is inserted. In this instance the article shown consists of continuous strips F of taffy-like candy. As the strips of candy F are inserted into the grooves *e* of the paper strip A from the previously described article delivery mechanism D, a top layer E of waxed paper or other suitable covering material is placed above the candy strips F, in the manner previously described and as generally illustrated in Fig. 9.

As shown in Figs. 13 and 14, the paper strip A, during the delivery of the candy strips F and the application of the top layer E, is traveling on bed plate 240 and the partitions 248 of the bed plate 240 separate the partitions *f* of the paper, thereby maintaining the predetermined shape of the paper previously fixed by the plaiting mechanism A. As shown in Fig. 14, the belt 208 presses down firmly against the top layer *e*. The marginal edges G and H of the paper strip A extend outwardly, or outwardly and upwardly. Where the continuous length of material passes beneath the belt 208, or at point 250 (see Figs. 4 and 5) the partition strips 248 terminate and at this point the side strips 256 and 258, which tend to converge toward each other, press against the sides of the package and compress it, due to the action of springs 260, 262, 274 and 276 (see Figs. 4 and 14). At the same time, the folding elements 252 and 254 cause the marginal edges G and H to be folded over the top layer E, as illustrated in Fig. 9. The marginal edges G and H are then preferably sealed to the top layer E by heater elements 290 and 292 disposed directly above the folding elements 252 and 254, as shown in Figs. 4, 5, and 15. A continuous package is thereby formed containing individual strips of candy separated from each other by a partition of the packaging material. The continuous package thus formed is then severed by any suitable type of severing mechanism, as for example that previously described, and the candy packages produced by the severing operation are preferably further wrapped with a suitable wrapper in any suitable manner.

It will be understood that the invention is susceptible of considerable variation and modification in the manner of its practical application. For example, the apparatus described is not limited to the use of any particular type of knife or other severing means for severing the articles J. A continuously rotating knife may be used instead of the vertical reciprocatable knife previously described. It is important from the standpoint of the invention that the knife operate in such a way as not to interfere with the substantially continuous forward movement of the continuous strip A, the article F and any auxiliary packaging materials, such as the top layer E; otherwise, a take-up mechanism would have to be provided to take up the length of material which would accumulate behind the severing means, or it would be necessary to feed the various portions of the package, including the article itself, intermittently, and while the apparatus does not preclude the possibility of intermittent feeding, it will be apparent that a continuous operation is much more desirable.

As previously indicated, while the invention is especially suited for packaging candy and the like with a paper packaging material, preferably one which is waxed, it will be understood that other types of packaging material may be used, as for example regenerated cellulose, cellulose acetate, and rubber hydrohalides (Pliofilm). It is preferable to use a material which is sufficiently ther-

moplastic to permit heat sealing in the manner previously described, although it will be understood that in some instances the heat sealing operation may be omitted.

Other types of mechanisms may be employed for folding over the marginal edges G and H. For example, instead of a pair of plates 252 and 254, rollers or endless belts may be used to direct the edges of the paper inwardly toward each other. Likewise, as will be apparent to those skilled in the art, other types of driving mechanisms and other types of feed mechanisms may be employed without departing from the invention.

The invention provides a new and improved type of compartmented package, and a new and improved method and apparatus for forming such a package.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an apparatus for packaging articles, the combination of, means for plaiting a continuous strip of packaging material into a plurality of grooves spaced laterally and extending lengthwise, means for inserting articles in continuous strips into said grooves, and means for severing packaged articles from the end of said continuous strip.

2. In an apparatus for packaging articles, the combination of, means for plaiting a continuous strip of packaging material into a plurality of grooves spaced laterally and extending lengthwise, means for inserting articles into said grooves, means for folding marginal portions of said continuous strip over said articles, and means for severing packaged articles from the end of said continuous strip.

3. In an apparatus for packaging articles, the combination of, means for plaiting a continuous strip of packaging material into a plurality of grooves spaced laterally and extending lengthwise, means for inserting articles into said grooves, and means for supplying a second continuous strip of packaging material over the top of said articles.

4. In an apparatus for packaging articles, the combination of, means for plaiting a continuous strip of packaging material into a plurality of grooves spaced laterally and extending lengthwise, means for inserting articles into said grooves, means for supplying a second continuous strip of packaging material over the top of said articles, and means for sealing said two continuous strips of packaging material together.

5. In an apparatus for packaging articles, the combination of, means for plaiting a continuous strip of packaging material into a plurality of grooves spaced laterally and extending lengthwise, means for inserting articles into said grooves, means for supplying a second continuous strip of packaging material over the top of said articles, and heat sealing means for heat sealing said two continuous strips together.

6. In an apparatus for packaging candy, the combination of, means for plaiting a continuous strip of packaging material into a plurality of laterally spaced grooves, means for inserting continuous strips of candy into said grooves, means for supplying a second continuous strip of packaging material over the top of said candy strips, means for folding marginal portions of said first continuous strip of packaging material over said second continuous strip of packaging material, means for heat sealing together said first and second strips of packaging material, and means for severing packaged articles of predetermined size from the end of the resultant continuous strip of packaged candy.

7. A method of packaging which comprises plaiting the end of a continuous strip of flexible sheet material to form plaits spaced apart laterally and extending longitudinally, inserting an article into the spaces between said plaits, and then completing the formation of the package.

8. A method of packaging which comprises plaiting the end of a continuous strip of flexible sheet material to form longitudinally extending, substantially vertical plaits spaced apart laterally, inserting articles into the spaces between said plaits, completing the formation of the package in continuous strip form, and severing packaged articles of predetermined size from the end of said strip.

9. The method of packaging which comprises continuously forming laterally spaced plaits lengthwise in a continuous strip of packaging material, continuously introducing articles in continuous strip form into the spaces between said plaits, completing the formation of a packaged material in continuous strip form after the insertion of said articles, and severing packaged articles of predetermined size from the end of said continuous strip of packaged material.

10. A method of packaging which comprises continuously forming laterally spaced plaits extending longitudinally on the end of a continuous strip of packaging material, continuously inserting articles into spaces between said plaits, continuously supplying a second continuous strip of packaging material over the top of said grooves containing said articles, folding marginal portions of said first continuous strip of packaging material over said second continuous strip, and severing packaged articles transversely from the end of the resultant continuous package.

11. A method of packaging as claimed in claim 10, in which said continuous strip of packaging material are sealed together.

12. A method of packaging as claimed in claim 10, in which said continuous strips of packaging material are thermoplastic and are heat sealed together prior to said severing operation.

EUGENE J. REBECHINI.