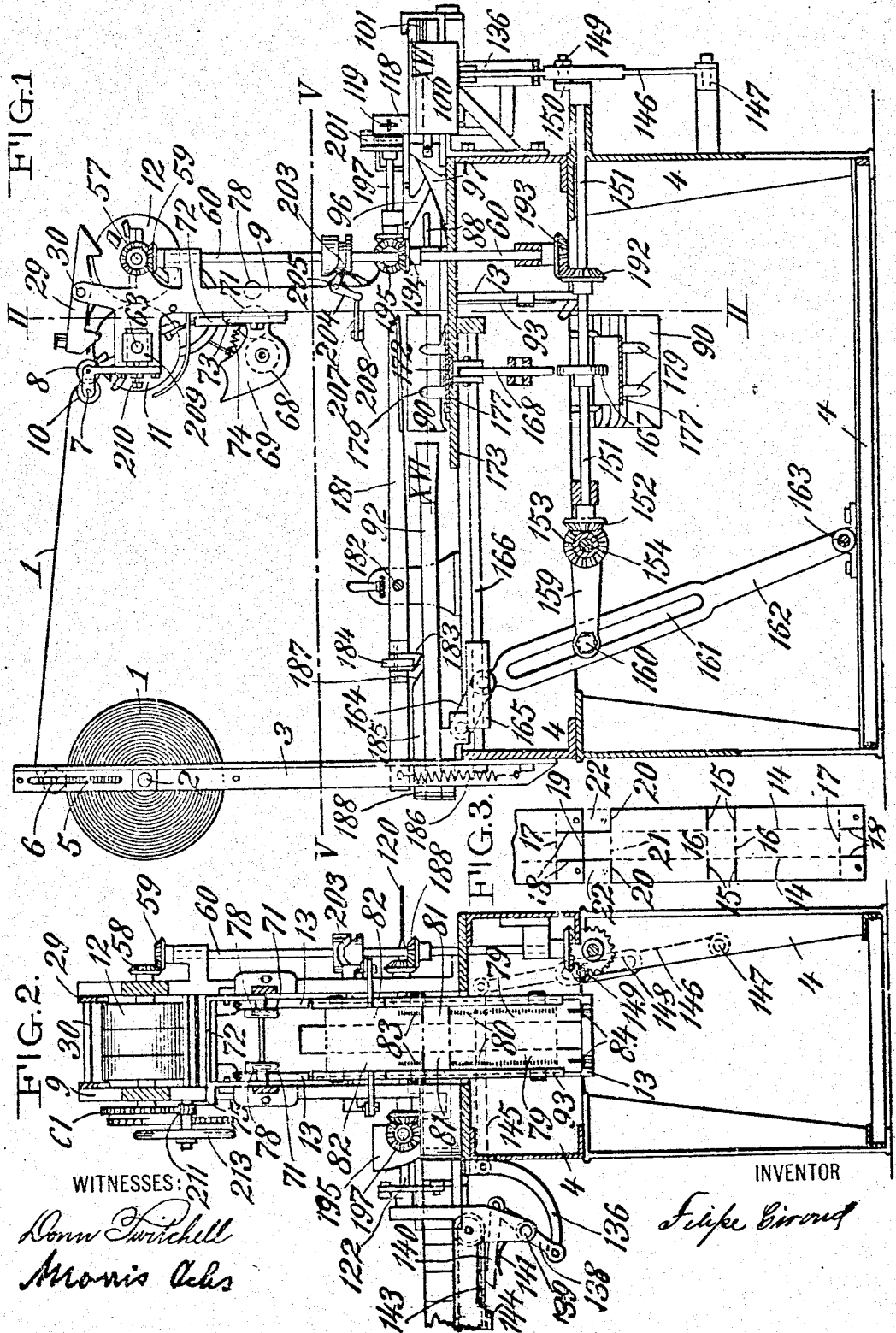


F. GIROUD.
MACHINE FOR WRAPPING VARIOUS ARTICLES.
APPLICATION FILED OCT. 12, 1907.

Patented Aug. 23, 1910.

6 SHEETS—SHEET 1.

968,146.



F. GIROUD.
MACHINE FOR WRAPPING VARIOUS ARTICLES.
APPLICATION FILED OCT. 12, 1907.

968,146.

Patented Aug. 23, 1910.

5 SHEETS—SHEET 2.

FIG. 4.

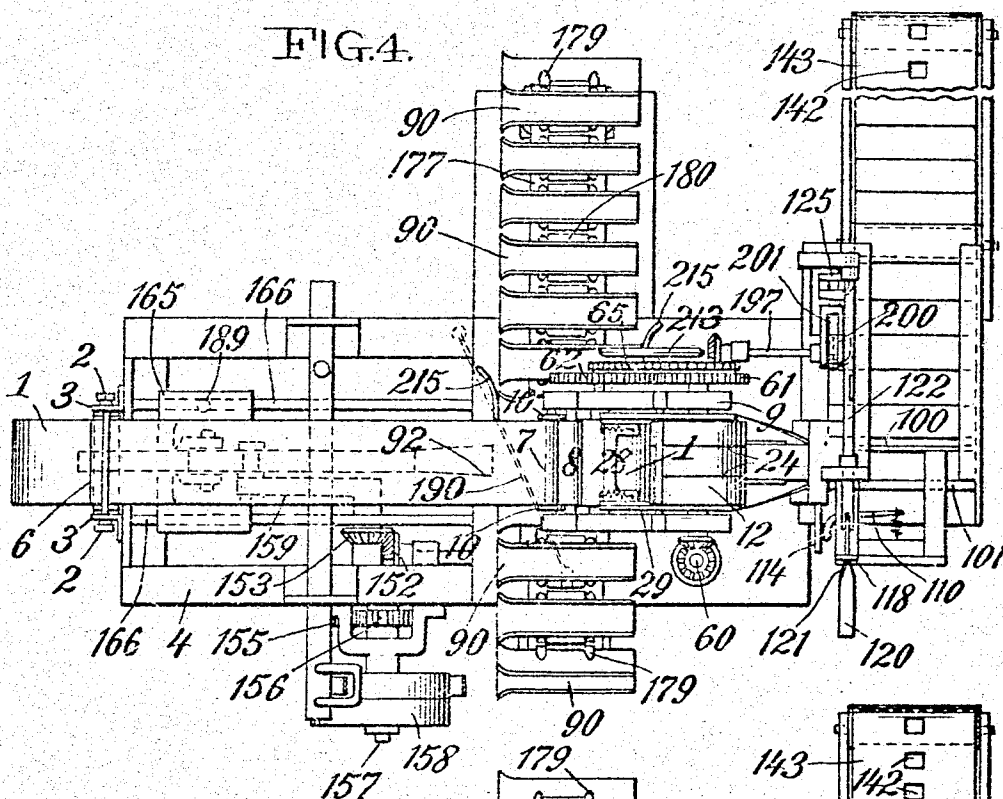
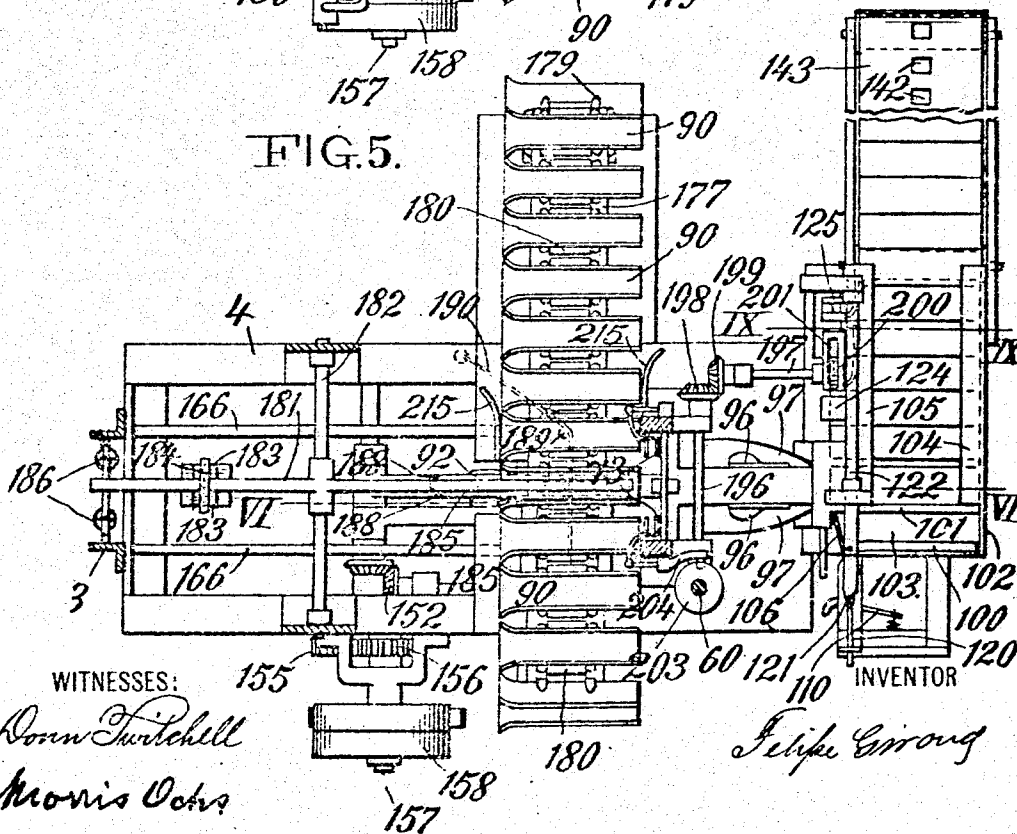


FIG. 5.



WITNESSES:

Donn Twitchell
Monis Ochs

INVENTOR

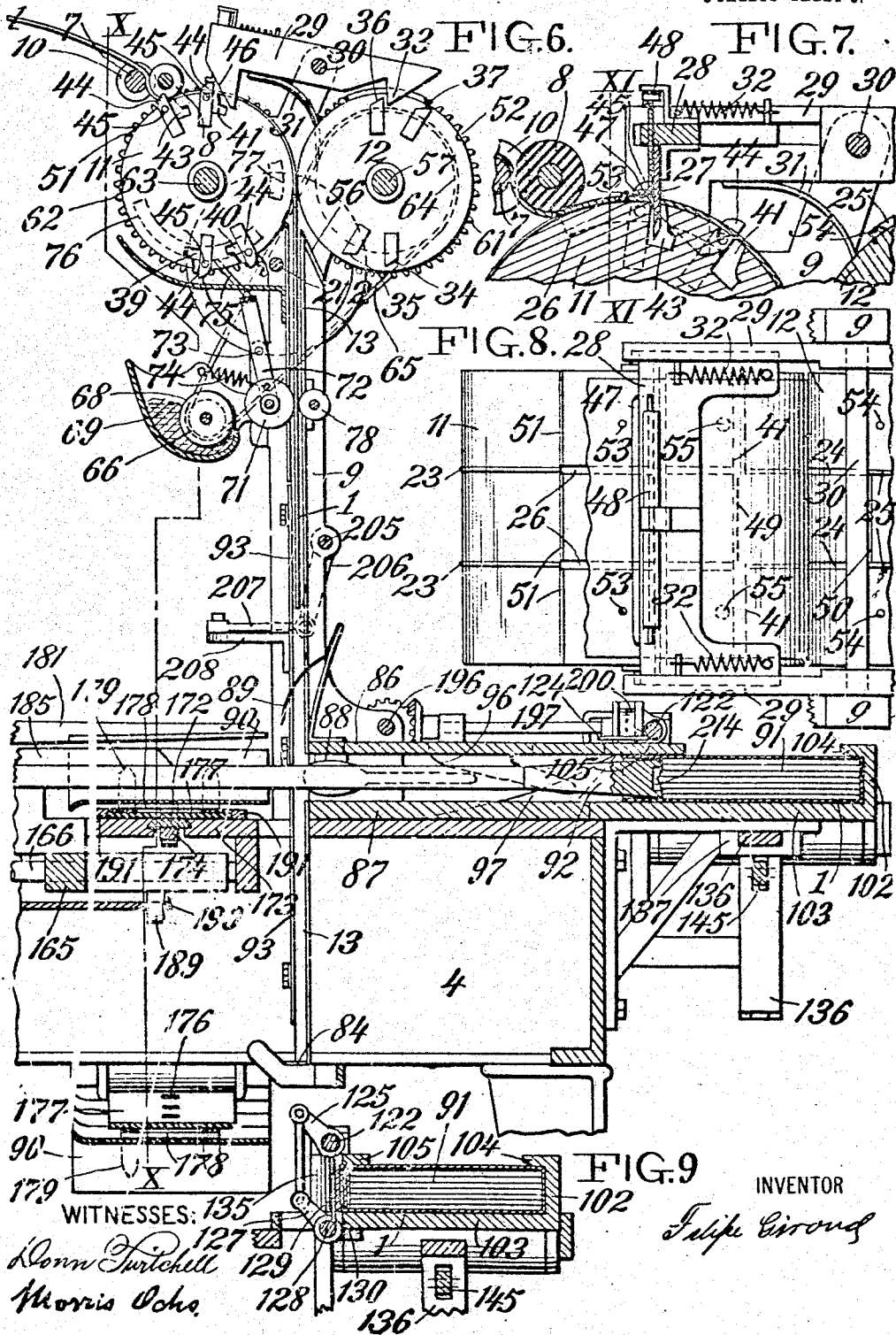
Felipe Giroud

F. GIROUD.
MACHINE FOR WRAPPING VARIOUS ARTICLES.
APPLICATION FILED OCT. 12, 1907.

968,146.

Patented Aug. 23, 1910.

6 SHEETS—SHEET 3.

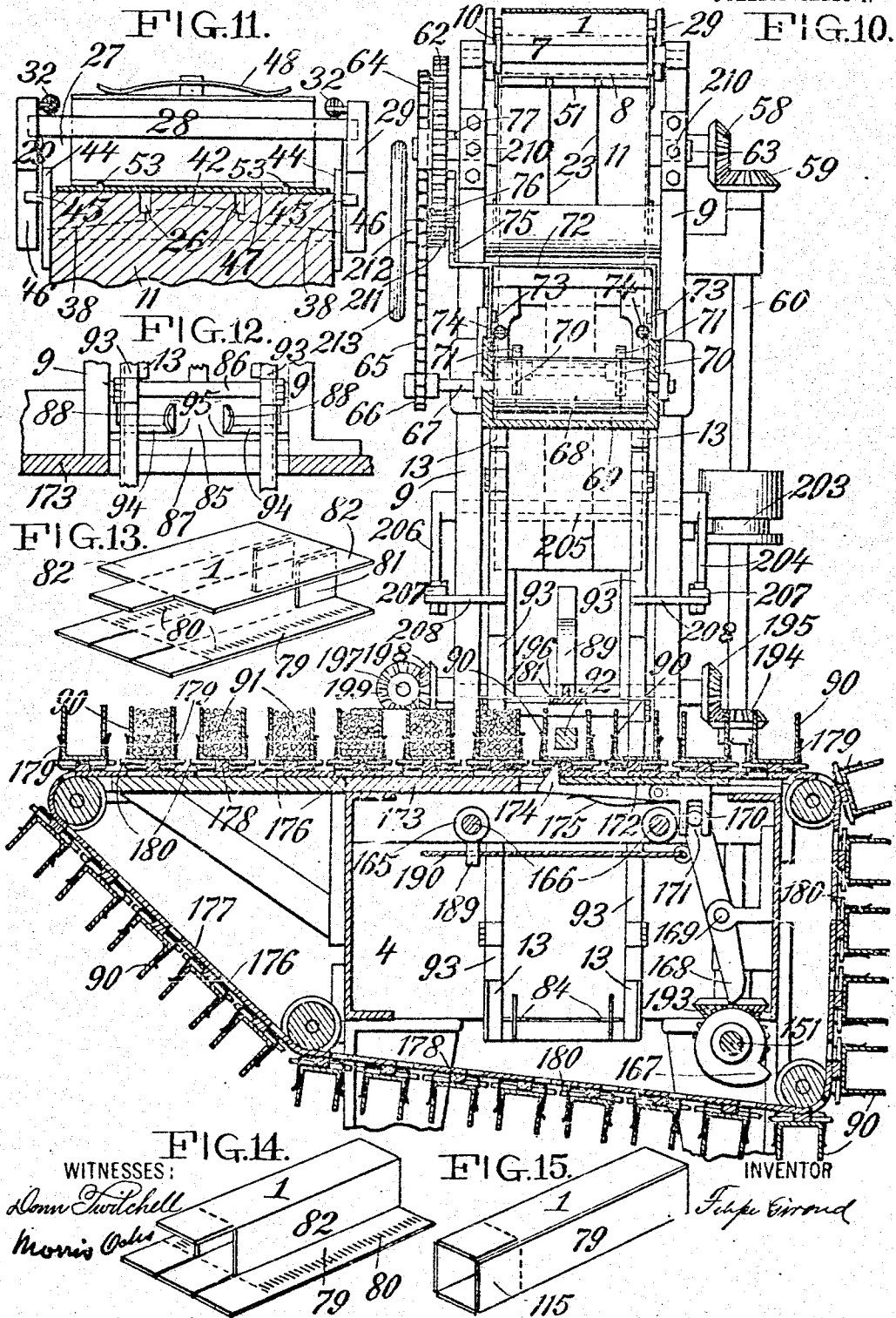


F. GIROUD.
MACHINE FOR WRAPPING VARIOUS ARTICLES.
APPLICATION FILED OCT. 12, 1907.

968,146.

Patented Aug. 23, 1910.

5 SHEETS—SHEET 4.

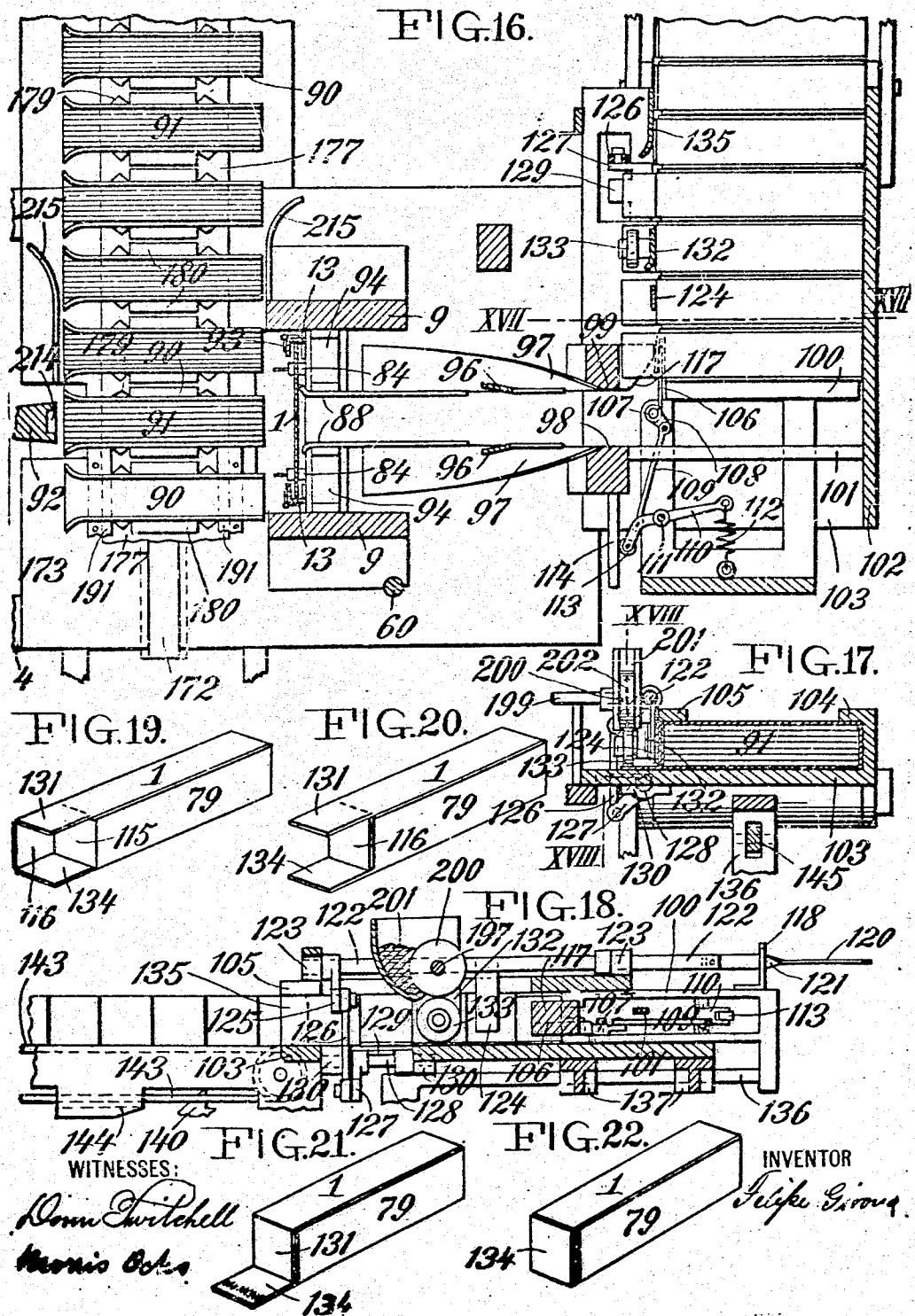


F. GIROUD.
MACHINE FOR WRAPPING VARIOUS ARTICLES.
APPLICATION FILED OCT. 12, 1897.

968,146.

Patented Aug. 23, 1910.

5 SHEETS—SHEET 5.



UNITED STATES PATENT OFFICE.

FELIPE GIROUD, OF NEW YORK, N. Y.

MACHINE FOR WRAPPING VARIOUS ARTICLES.

968,146.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed October 12, 1907. Serial No. 397,139.

To all whom it may concern:

Be it known that I, FELIPE GIROUD, a citizen of the Island of Cuba, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Wrapping Various Articles, of which the following is a specification.

This invention relates to machines for forming a paper wrapper or box simultaneous with the placing of an article within such a wrapper or box.

The object of the invention is to provide a means by which the article can force the wrapper through the machine, causing a sealed box to be formed containing the article.

The invention consists of a means for forming and cutting off a wrapper blank from a supply roll of paper, and means for applying paste to portions of the blank and for placing it in position to receive the article to be wrapped. An endless conveyer is provided with containers for the article, an intermittent movement being imparted to the conveyer, causing the containers to successively come to rest in range with a reciprocating plunger and the wrapper blank. Movement of the plunger forces the article from the container against the wrapper, and causes the wrapper to be folded upon the article. At the end of movement of the plunger, the package assumes a position in range with a plunger moving transversely of the first mentioned plunger. Movement of the last mentioned plunger, causes folding of end flaps, the application of paste, and final delivery of the finished package upon an endless traveling belt.

Figure 1 of the drawings is a sectional elevation of the machine. Fig. 2 is a transverse section on the line II—II of Fig. 1. Fig. 3 is a view illustrating the formation of the wrapper blanks. Fig. 4 is a plan view of the machine. Fig. 5 is a sectional plan view on the line V—V of Fig. 1, the parts being shown in a different position from that shown in Figs. 1, 2, and 4. Fig. 6 is a sectional elevation on this line VI—VI of Fig. 5. Fig. 7 is a detail view showing the means for forming and cutting off the wrapper blank. Fig. 8 is a plan view of the parts shown in Fig. 7. Fig. 9 is a section on the line IX—IX of Fig. 5. Fig. 10 is a trans-

verse section on the line X—X of Fig. 6. Fig. 11 is a section on the line XI—XI of Fig. 7. Fig. 12 is a detail view similar to Fig. 2 with the wrapper blank removed. Fig. 13 is a view of the wrapper blank after passing through the folder shown in Fig. 12. Figs. 14 and 15 show folding of side flaps of the wrapper. Fig. 16 is a sectional plan view on the line XVI—XVI of Fig. 1. Fig. 17 is a section on the line XVII—XVII of Fig. 16. Fig. 18 is a section on the line XVIII—XVIII of Fig. 17. Figs. 19, 20, 21 and 22 show different steps in folding the end flaps of the package.

A roll of paper 1 of substantial thickness is mounted in bearings 2 on standards 3 forming part of the main frame 4. Riding in vertical slots 5 formed in standard 3 is a roll 6 resting on the roll of paper. The paper passes from beneath roller 6, partly around said roller and back between two guide rollers 7 and 8, which rotate in bearings formed on standards 9 forming part of main frame 4. The tendency of the paper to retain the curvature of the roll of paper is overcome by strain in an opposite direction as it passes partly around roller 6. As the paper passes between rollers 7 and 8, it is guided by flanges 10 formed on roller 7 into alinement with a drum 11, the paper passing beneath rubber roller 8 onto drum 11. Drum 11 and another drum 12 actuate means for making creases and slits in the paper forming the wrapper blank, finally cutting off the blank and feeding it to a chute 13 as hereinafter described.

As shown in Fig. 3, a crease 14 is formed lengthwise of the blank one-third its width from each margin. At the center of the blank, two slits, 15, are cut, extending from each margin to crease line 14, at a distance apart equal to their length; and creases 16, are formed across the center part on a line with slits 15. At the lower end of the blank a crease 17 is formed crosswise, a distance from the end equal to one-third the width of the blank, and two slits 18 are cut extending from the end to crease 17 on a line with crease 14. The upper end of the blank is separated from the blank coming after, by a crosscut 19 extending the full width of the paper. A slit 20 is cut extending from each margin to crease 14, at a distance from the upper end equal to its length. A crease

21 being formed across the center part on a line with slits 20. A continuation of slits 18 of the second mentioned blank is made at the upper end of the first mentioned blank extending from crosscut 19 to slit 20. This causes the portions 22 included within the dotted margin to be cut away. As the paper passes between drums 11 and 12, lengthwise creases 14 are formed by ribs 23 on roller 11, which force the paper into corresponding depressions 24 on roller 12, the lengthwise slits 18 being cut by knives 25 on roller 12, which pass through the paper into corresponding depressions 26 on roller 11. The cross slits 13, 19 and 20 are cut by means of a knife 27 attached to a yielding slide 28 moving in guides on a frame 29 centrally pivoted at 30 to standards 9. The end of frame 29 carrying slide 28 is held up by means of springs 31, and slide 28 is held at the outer end of frame 29 by means of springs 32. The end of frame 29 opposite slide 28 is provided with projections 33 adapted for engagement with cams 34, 35, 36 and 37 formed on the ends of roller 12. Cams 34, 35 and 36 will cause the ends 38 of knife 27 to cut slits 15 and 20 by passing through the paper into corresponding recesses 39, 40 and 41 formed on roller 11. Cam 37 causes a greater downward movement of knife 27, causing the center 42 of the knife, along with the ends 38, to pass through the paper into a recess 43 extending across the whole face of drum 11, thereby making crosscut 19 the full width of the paper. By reference to Fig. 11 of the drawing, it will be seen that the cutting edges 38 of the knife extend from the ends toward the center at an inclination, and that the central part 42 is composed of similar cutting edges offset from the cutting edges 38. The cutting edges 38 will therefore cut the paper until the offset is reached, and the cutting edge 42 will not act until the knife has been further moved a distance equal to the offset. Knife 37 is guided into recesses 39, 40, 41 and 43 by means of projections 44 formed on the ends of roller 11. When knife 27 comes in contact with guides 44, springs 32 will permit slide 28 carrying knife 27, to move in unison with roller 11, until pins 45 riding against an inclined face 46 formed on frame 29, causes the frame to move the knife out of engagement with the paper and guides 44. When knife 27 passes down through the paper a stripper 47 on slide 28 is moved up against the face of a spring 48, so that when the knife is lifted from the paper, the stripper will hold the paper down during the withdrawal of the knife, the stripper being lifted from the paper after the withdrawal of the knife, by means of slide 28. The cross creases 16 and 21 are formed as the paper passes between the drums 11 and 12, by means of short ribs 49

on roller 11 placed between the recesses 39, 40 and 41 which the ends 38 of knife 27 enter in cutting the cross slits 15 and 20. Ribs 49 force the paper into corresponding depressions 50 formed on roller 12. The crease 17 is formed by means of a rib 51 extending across the full width of the drum 11, said rib forcing the paper into a corresponding depression 52 formed on roller 12.

When a wrapper blank has been cut off by means of knife 27, freed of the paper by means of drums 11 and 12 ceases; as the friction between drum 11 and roller 8 is not enough to feed the paper. To overcome this difficulty, pins 53 on drum 11 pierce the paper and carry it forward between the drums 11 and 12, after a wrapper blank has been cut off by knife 27.

In order that the cutaway portion 22 of the paper shall not enter chute 13, pins 54 on drum 12 pass through the portion 22 into corresponding holes 55 formed on drum 11, so that as the portion 22 passes from between the drums 11 and 12, the pins 54 aided by knives 25 will carry portion 22 away from alignment with chute 13, and permit it to slide off upon the incline 56.

Shaft 57 secured to drum 12, rotates in bearings on standards 9 and has a bevel gear wheel 58 on one end in mesh with a bevel gear wheel 59 on a vertical shaft 60 by which it is driven. The opposite end of shaft 57 has a gear wheel 61 attached, in mesh with a gear wheel 62 on a shaft 63 secured to drum 11. Attached to gear wheel 61 is a chain wheel 64, driving a chain 65 and a chain wheel 66 which is secured to a shaft 67 carrying a roller 68 which turns in a paste reservoir 69. A series of indentations 70 are made in paste roller 68 near each end, which serve to carry paste from reservoir 69, to be taken up by paste wheels 71 which are mounted at the lower end of a swinging frame 72 pivoted at 73. Paste wheels 71 are held against paste roller 68 by means of springs 74 acting on swinging frame 72. The upper end of swinging frame 72 is provided with an extension 75 adapted for engagement with cams 76 and 77 on gear wheel 62. By means of cams 76 and 77 paste wheels 71 are moved away from paste roller 68, into engagement with side flaps of the wrapper blank as they pass down chute 13. Wheels 78 are so placed on the opposite side of the blank that the blank passes between paste wheels 71 and wheels 78. Cam 76 cause paste wheels 71 to be held in contact with side flaps 79 during their travel between wheels 71 and 78 causing paste to be applied throughout the length of side flaps 79, as shown at 80 in Fig. 2. A break occurs before cam 77 acts, causing paste wheel 71 to be moved away from the center end flaps 81. Then as the flaps continue in their downward movement, cam 77, 130

will cause paste wheel 71 to be held against side flaps 82 for a distance equal to one-third the width of the wrapper blank, as shown at 83 in Fig. 2. The blank as it passes from between drums 11 and 12 comes to rest on supports 84 at the lower end of chute 13. The center of the blank then stands on a line with a channel 85 formed by a top plate 86, a bottom plate 87 and side plates 88, the blank being held away from said plates during its downward movement by means of a light spring 89 attached to the top plate 86. When the wrapper comes to rest on supports 84, a container 90 for the article 91, stands on the side of the wrapper opposite the channel 85. A reciprocating plunger 92 then forces the article 91 out of container 90 against the center of the wrapper, causing the wrapper to be forced against the ends of plates 86, 87 and 88. When this takes place hinged doors 93 forming part of chute 13 are moved to one side, permitting the upper and lower ends of the wrapper to swing clear of the chute, as they are folded upon the article by means of the top plate 86 and bottom plate 87. At the same time the center end flaps 81 are folded upon the article by means of the side plates 88. Side plates 88 have a support 94 from standards 9, so as to leave a space 95 for the passage of side flaps 79 and 82.

As the article 91 and the wrapper, folded as shown in Fig. 13, continue in their travel between top plate 86 and bottom plate 87, the upper side flaps 82 will be turned down upon the article, and upon the center end flaps 81, by means of guides 96 attached to top plate 86. Paste 83 on side flaps 82 will cause center end flaps 81 to adhere to side flaps 82, and the wrapper will appear as shown in Fig. 14. Continued movement of the wrapper and the article will cause the lower side flaps 79 to be turned up against the side flaps 82 by means of guides 97 turning from bottom plate 87 to vertical side walls 98 and 99. Paste 80 will cause side flaps 79 to adhere to side flaps 82, the wrapper containing the article then having the appearance of a package as shown in Fig. 15. Reciprocating plunger 92 will then have reached the end of its movement in one direction and the package will stand in line with a reciprocating plunger 100, moving transversely of the line of travel of plunger 92. The package then occupying a chamber in which side flaps 79 are held in place on one side by a bar 101, and on the opposite side by packages previously formed. Bar 101 extends from vertical side wall 98 to a vertical wall 102 forming part of a channel having a bottom plate 103 and top plates 104 and 105, through which channel the packages are moved by means of plunger 100. A plate 106 is pivoted at 107 to plunger 100, and an arm 108 forming part of

plate 106 is connected by a rod 109 to one end of a lever 110 which is pivoted at its center 111 to plunger 100. A spring 112 is connected to the other end of lever 110, causing plate 106 to rest against wall 98 when plunger 100 occupies the position shown in Fig. 5. The end of lever 110 to which rod 109 is connected is provided with a roller 113 adapted for engagement with a projection 114 from wall 98. When plunger 92 has moved away from the package, plunger 100 will begin to move, causing plate 106 to turn end flap 115, shown in Fig. 15, partly toward the article, then roller 113 will strike projection 114, causing plate 106 to turn end flap 115 to the position shown in Fig. 19. As the movement of plunger 100 continues, roller 113 will ride along projection 114 and the package will be moved from the position shown in Fig. 5 to the position shown in Figs. 4 and 16. During this movement of the package, end flap 116 will be turned from the position shown in Fig. 19 to the position shown in Fig. 20, by means of an inclined projection 117 from vertical wall 99. To plunger 100 is secured a thin vertical plate 118 having a vertical slot 119 through which passes a bar 120 having a twist 121. Bar 120 is connected to a rock shaft 122 mounted in bearings 123 on plate 105. To rock shaft 122 is secured a plate 124 and an arm 125, which is connected by a rod 126 to an arm 127. Arm 127 is secured to a short rock shaft 128, having a plate 129 attached, and mounted in bearings 130 on plate 103. When plunger 100 has reached the end of its movement as shown in Figs. 16, 17 and 18, plate 118 acting on twist 121 will have caused plate 124 on rock shaft 122 to turn flap 131 of a previously formed package, from the position shown in Fig. 20 to the position shown in Fig. 21. Then as this package is moved forward by the packages coming after, flap 131 will be held in place by a plate 132 attached to top plate 105, and a paste wheel 133 mounted on plate 132 will apply paste to end flap 134. As the package is moved forward by the packages coming after, flap 134 will come to rest above plate 129. Then as plunger 100 starts on its return movement, vertical plate 118 acting on twist 121 will cause plate 129, through intermediate connections, to turn end flap 134 from the position shown in Fig. 21 to the position shown in Fig. 22. At the same time plate 124 will be turned up into position to permit the upper end flap 131 of another package to pass under it. When plunger 100 again moves the package forward, flap 134 will be held in place by a vertical wall 135, and plate 129 will be turned down into position to permit the lower end flap 134 of another package to pass over it.

Plunger 100 is secured to one end of a bar 130.

136 riding in guides 137 on plate 103. The other end of bar 136 is connected to the lower end of a lever 138 pivoted at 139. To the upper end of lever 138 is connected a pawl 140, held by means of a spring 141 in engagement with rack holes 142 formed in an endless traveling belt 143. When plunger 100 moves backward, pawl 140 will move forward and be thrown out of engagement with the lower run of endless belt 143, by means of a plate 144. Then as plunger 100 moves forward, pawl 140 will engage belt 143 at a time to cause forward movement of the upper run of the belt, a distance equal to the forward movement of the packages as they are moved onto said belt from plate 103. Bar 136 is connected by a link 145 to the upper end of a lever 146, pivoted at its lower end 147 to the main frame 4. The center of lever 146 is provided with a slot 148 in which rides a pin 149 on a crank arm 150, secured to one end of a horizontal shaft 151. To the other end of shaft 151 is secured a bevel gear wheel 152 in mesh with a bevel gear wheel 153, secured to a short shaft 154. On one end of shaft 154 is secured a gear wheel 155, in mesh with a small gear wheel 156, secured to a shaft 157, to which is secured a drive pulley 158. To the other end of shaft 154 is secured a crank arm 159, provided with a pin 160 riding in a slot 161 formed on a lever 162 which is pivoted at its lower end 163, to main frame 4. The upper end of lever 162 is connected by a link 164 to a slide 165 to which the reciprocating plunger 92 is secured. Slide 165 is mounted on guide bars 166 forming part of main frame 4. Shaft 151 has a cam 167 secured to it, adapted for engagement with the lower end of a lever 168 pivoted at its center 169. The upper end of lever 168 is provided with a pin 170 engaging a vertical slot 171 formed on a slide 172, riding in guides formed on the top plate 173 of main frame 4. Slide 172 is provided with a pawl 174, held up by means of a spring 175, and adapted for engagement with rack holes 176 in the upper run of an endless conveyer belt 177. Conveyer belt 177 is provided with a series of flat cross bars 178, secured at each end to V shaped springs 179, which act as holders for the containers 90. Containers 90 have flanges 180 fitting between the two series of V shaped springs 179. The ends of the springs are curved and pointed, so that an attendant can readily place the containers and the flanges between the springs, and guide the containers to rest upon the bars 178. The containers 90 are open at each end, and also on one side, in order that the article 91 can be readily placed in the container. Various articles may be placed in the containers, macaroni being the article shown in the drawings.

A lever 181, centrally pivoted at 182 is provided with mechanism whereby forward movement of plunger 92 causes downward movement of one end of lever 181, thereby serving to compress the article 91, in the container 90 then in range with plunger 92. Pivoted to the opposite end of lever 181 are two dogs 183 held against the sides of lever 181 by means of a spring 184. Dogs 183 extend downward in range with a projection 185 forming part of plunger 92. By means of springs 186 connected to lever 181, the dogs are held in engagement with projection 185. An inclined face 187 is formed on the forward end of projection 185, so that when plunger 92 moves forward, the incline, taking against dogs 183, causes upward movement of the end of the lever to which the dogs are pivoted, and downward movement of the opposite end. During the forward movement of plunger 92 through the container 90, the dogs will ride on projection 185. As the forward movement continues the dogs drop back of projection 185. Then as the plunger 92 is moving backward, an inclined face 188 on each side of the rear end of projection 185, takes against the dogs, causing them to swing out and permit the projection 185 to pass. During the remainder of the return movement of plunger 92 and the forward movement of projection 185 to the dogs 183, the conveyer belt 177 is moved, causing another filled container to be placed in front of plunger 92. When plunger 92 has forced the article 91 from the container and reached the end of its forward movement, a projection 189 on slide 165, takes against a cord 190 connected to the upper end of lever 168 and causes movement of pawl 174 into engagement with a rack hole 176. Then at the end of the return movement of plunger 92, the plunger no longer extending through the container, cam 167 acting on lever 168 causes pawl 174 to move the conveyer belt 177, and place the empty container out of range, and a filled container in range with the plunger. The belt is held in place by a plate 191, overlapping each edge. Shaft 151 has a bevel gear wheel 192 secured to it, in mesh with a bevel gear wheel 193, secured to vertical shaft 60. Secured to vertical shaft 60 is a bevel gear wheel 194 in mesh with a bevel gear wheel 195 on a shaft 196, which drives another shaft 197 by means of bevel gear wheels 193 and 199. To shaft 197 is secured a paste roller 200 turning in a paste reservoir 201. A series of indentations 202 are made in paste roller 200, which serve to carry paste from reservoir 201, to be taken up by paste wheel 3. Vertical shaft 60 has a cam 203 secured to it, which actuates a bell-crank lever 204 secured to one end of a rock shaft 205 mounted on standards 9. A crank 206 is

secured to the other end of shaft 205, and a link 207 connects cranks 204 and 206 to an arm 208 attached to the hinged doors 93 forming part of chute 13. By means of bevel gear wheels 58 and 59, vertical shaft 60 causes the rotation of shaft 57, and by means of gear wheels 61 and 62 shaft 57 causes the rotation of shaft 63. The bearings 209 of shaft 63 can be adjusted by means of screws 210, so that drum 11 can be adjusted to suit the thickness of paper passing between drums 11 and 12. In mesh with gear wheel 62 is a pinion 211 secured to a shaft 212, to which is secured a fly-wheel 213, the purpose of which is to ease the shock caused by knife 27 when it strikes guides 44 on drum 11.

In making use of macaroni to form the packages, trouble is caused by the irregular lengths of the macaroni sticks. To overcome this difficulty, the end of plunger 92 is provided with a shallow cavity 214, which will permit extra long sticks to be forced by the center of the wrapper into said cavity. By means of guides 215, the article 91 is forced into the container 90 as it is moved forward by means of conveyer belt 177.

It is the intention in some cases to make use of a dummy block instead of the article 91, to form a package wrapper such as shown in Fig. 15, in which case the mechanism for folding the end flaps 115, 116, 131 and 134 will be omitted.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A wrapper forming machine, comprising a reciprocating plunger, wrapper folding devices, and two drums for feeding paper to said folding devices, the paper passing over one of said drums for cutting lengthwise slits, and for forming lengthwise and crosswise creases in said paper, a yielding slide having an attached knife, the cutting edge of said knife having an offset at the center, means whereby said yielding slide coöperates with the drum over which the paper passes to cause the ends of said knife to cut cross slits in the side margins of the paper, and to cause the ends and the center of said knife to cut off from said paper a wrapper blank having said slits and creases; and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding devices.

2. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices and two drums between which paper passes, the paper passing over one of said drums, means on said drums for cutting lengthwise slits, and for forming lengthwise and cross creases in said paper; a yielding slide having an attached knife,

said knife extending transversely of the paper passing over said drum, guides on said drum, means whereby said knife is caused to engage said guides, and cut slits in the side margins of said paper, and to cut off from said paper a wrapper blank in which said slits and creases have been made, said yielding slide permitting the knife to move in unison with the drum while the knife remains in the paper, and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding device.

3. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices, and a drum over which paper passes, a yielding slide having an attached knife and a spring pressed stripper, recesses and guides on said drum, means whereby said knife is caused to engage said guides and pass through the paper into said recesses, and to be withdrawn therefrom, said yielding slide permitting the knife to move in unison with the drum while the knife remains in the paper, and said stripper holding the paper against the drum while the knife is being withdrawn, means whereby said knife is caused to cut cross slits in the side margin of said paper, and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding devices.

4. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices, and two drums for feeding paper to said folding devices, a yielding slide, having an attached knife, guides on one of said drums over which the paper passes, a swinging frame carrying said yielding slide, means on one of said drums for actuating said swinging frame, whereby said knife is caused to engage said guides and cut the paper, and means on the other drum for actuating said swinging frame, whereby the knife is disengaged from said guides, said actuating means being adapted to cause the knife to cut cross-slits in the side margins of the paper, and to cut off from said paper a wrapper blank in which said slits have been made; and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding devices.

5. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices, and two drums for feeding paper to said folding devices, a yielding slide having an attached knife the cutting edge of said knife having an offset at the center, guides on one of said drums over which drum the paper passes, a swinging frame carrying said yielding slide, means on the other one of said drums for actuating said swinging frame, whereby the ends of said knife are caused to engage said

guides and cut cross slits in the side margins of the paper, means on the first mentioned drum for actuating said swinging frame, whereby the ends and center of said knife are caused to cut off a wrapper blank having said cross slits; and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding devices.

6. A wrapper forming machine comprising two drums between which paper passes, means forming lengthwise and cross creases in said paper, means for cutting lengthwise slits in said paper, a yielding slide having an attached knife said knife being adapted to cut cross slits in the paper, and to cut off a wrapper having said cross slits, a swinging frame carrying said yielding slide, pins and guides on one of said drums, means for actuating said swinging frame causing said knife to engage said guides and cut the paper, said yielding slide permitting the knife to move in unison with the drum while cutting the paper, and said pins carrying the paper between said drums after the knife has cut off a wrapper blank having said cross slits.

7. A wrapper forming machine comprising two drums between which paper passes, means on said drums forming lengthwise and cross creases in said paper, knives cutting lengthwise and cross slits in said paper, and causing the formation of a cut out portion one of said knives cutting off from said paper, a wrapper blank in which said creases and slits have been made, a chute receiving said blank as it passes from between said drums, and pins on one of said drums serving to withdraw said cut out portion away from said chute, substantially as described.

8. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices and two drums between which paper passes, means on said drum for cutting lengthwise slits in said paper, a knife for cutting cross slits near the center of the side margins of the blank, said knife being adapted for cutting off a wrapper blank in which said slits have been made, a chute for conveying said blank from between said drums to said folding devices, and a stop in said chute causing the central portion of said blank to come to rest between said reciprocating plunger and said wrapper folding devices.

9. The combination with two drums between which paper passes, and means on said drums forming lengthwise and cross creases in said paper, of a knife adapted to cut cross slits in the margin of said paper, and to cut off a wrapper blank having said slits; and a pasting device adapted to apply paste to portions of the slitted margins of the wrapper, substantially as described.

10. A wrapper forming machine comprising a pair of drums, wrapper folding devices, a chute conveying a wrapper blank from between said drums to said folding devices, means applying paste to said wrapper during its travel in said chute, hinged doors forming part of said chute, and means automatically opening said doors, whereby swing of the upper and lower ends of the wrapper caused by the folding devices, is permitted by the open doors.

11. The combination with a pair of drums, a folding device and a chute conveying a wrapper blank from between said drums to rest between an article and the folding device; of a plunger provided with a shallow cavity at its center and means actuating said plunger, whereby the plunger forces the article and the wrapper into said folding device, said wrapper forcing irregular lengths of said article into said cavity at the center of the plunger.

12. A wrapper forming machine comprising a reciprocating plunger, wrapper folding devices, and a drum over which paper passes, a yielding slide having an attached knife, a swinging frame carrying said yielding slide, guides on said drum, means for actuating said swinging frame causing said knife to engage said guides and pass through and be withdrawn from the paper, said yielding slide permitting said knife to move in unison with the drum while the knife remains in the paper, means whereby said knife is caused to cut cross slits in the side margins of said paper, and to cut off from said paper a wrapper blank in which said slits have been made, and means for conveying said cut off wrapper blank to rest between said reciprocating plunger and wrapper folding devices.

13. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper between the folding device, and an article to be wrapped, a conveyer carrying a series of containers for said article, said containers being open at both ends, and also at one side, a pivoted lever coacting with said last mentioned open side of one of the containers, means actuating said plunger, whereby the plunger forces the article and the wrapper through the folding device, means causing said lever to compress the article contained in the container from which the article is being forced, and means imparting an intermittent movement to said conveyer.

14. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper between the folding device and the plunger, means whereby movement of the plunger through the folding device causes the formation of a package having the wrapper folded upon an article, a chamber receiving the

package, a reciprocating plunger moving in said chamber transversely of the first mentioned plunger, and a fixed bar on one side of said chamber, said bar holding the wrapper away from the plunger, and means for actuating the last mentioned plunger, whereby the package is moved away from the bar substantially as described.

15. A wrapper forming machine comprising a folding device, a reciprocating plunger, means for applying paste to a wrapper, and means supporting the pasted wrapper between the folding device and the plunger, means whereby movement of the plunger through the folding device causes the formation of a package having the wrapper folded upon an article, a chamber receiving the package, a reciprocating plunger moving in said chamber transversely of the first mentioned plunger, and a fixed bar on one side of said chamber, said bar holding the wrapper away from the plunger, and means for actuating the last mentioned plunger, whereby the package is moved away from the bar.

16. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper and an article between the folding device and the plunger, means whereby movement of the plunger through the folding device causes the formation of a package having the wrapper folded upon the article, a reciprocating plunger moving the package transversely of the line of travel of the first mentioned plunger, and a fixed bar holding the wrapper away from the last mentioned plunger, substantially as described.

17. A wrapper forming machine comprising a folding device, a reciprocating plunger and means supporting a wrapper between an article to be wrapped and said folding device, means actuating said plunger, whereby the plunger forces the article and the wrapper through the folding device, causing the formation of a package having the wrapper folded upon the article, a reciprocating plunger moving transversely of the line of travel of the first mentioned plunger, a pivoted plate on the last mentioned plunger, and means actuating it, whereby forward movement of said last mentioned plunger causes an end flap of the package to be folded.

18. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper and an article between the folding device and the plunger, means whereby movement of the plunger through the folding device causes the formation of a package having the wrapper folded upon the article, a chamber receiving the package, a reciprocating plunger moving in said chamber transversely of the first mentioned plunger, a fixed bar on one side of said chamber, and a stationary projection on the opposite side, said bar holding

the wrapper against the package; means for actuating the last mentioned plunger whereby the package is moved away from the bar, and an end flap is folded by the stationary projection during said movement of the package.

19. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper between an article to be wrapped and said folding device, means actuating said plunger, whereby the plunger forces the article and the wrapper through the folding device, causing the formation of a package having the wrapper folded upon the article, a reciprocating plunger moving transversely of the line of travel of the first mentioned plunger, a rock shaft actuated by said last mentioned plunger, and a plate on said rock shaft folding an end flap of the package.

20. A wrapper forming machine comprising a folding device, a reciprocating plunger, and means supporting a wrapper between an article to be wrapped and said folding device, means actuating said plunger whereby the plunger forces the article and the wrapper through the folding device, causing the formation of a package having the wrapper folded upon the article, a reciprocating plunger moving the package transversely of the line of travel of the first mentioned plunger, devices actuated by the last mentioned plunger, folding end flaps of the package, and means applying paste to an end flap during the movement of the package by said last mentioned plunger.

21. A wrapping machine comprising means for folding a wrapper, and for forming a package having the wrapper folded upon an article, a reciprocating plunger, a second reciprocating plunger moving transversely of the first mentioned plunger, the first mentioned plunger being adapted to move said package into range with said second plunger, the last mentioned plunger having a folder on one side of said package, a stationary projection on the opposite side of said package, means for actuating the last mentioned plunger, whereby an end flap is folded by said folder, the package is moved transversely of the line of travel of the first mentioned plunger, and an end flap is folded by the stationary projection during said movement of the package means for folding the upper end flap of the package, means for applying paste to the lower end flap during the movement of the package, and means for folding said paste coated end flap to the package.

22. A wrapper forming machine comprising a folding device, a reciprocating plunger forcing an article and a wrapper through the folding device, causing the formation of a package having the wrapper folded upon the article, a reciprocating plun-

ger moving the package transversely of the
line of travel of the first mentioned plunger.
an endless belt receiving said package and
means actuated by said last mentioned plun-
5 ger, causing forward movement of the belt
corresponding to forward movement of the
package by said last mentioned plunger.

Signed at New York in the county of New
York and State of New York this 10th day
of October A. D. 1907.

FELIPE GIROUD.

Witnesses:

M. TURNER,
SMITH THOMPSON.