F. GIROUD.

WRAPPING MACHINE.

APPLICATION FILED FEB. 2, 1911.

1,006,081.

Patented Oct. 17, 1911.

2 SHEETS—SHEET 1.

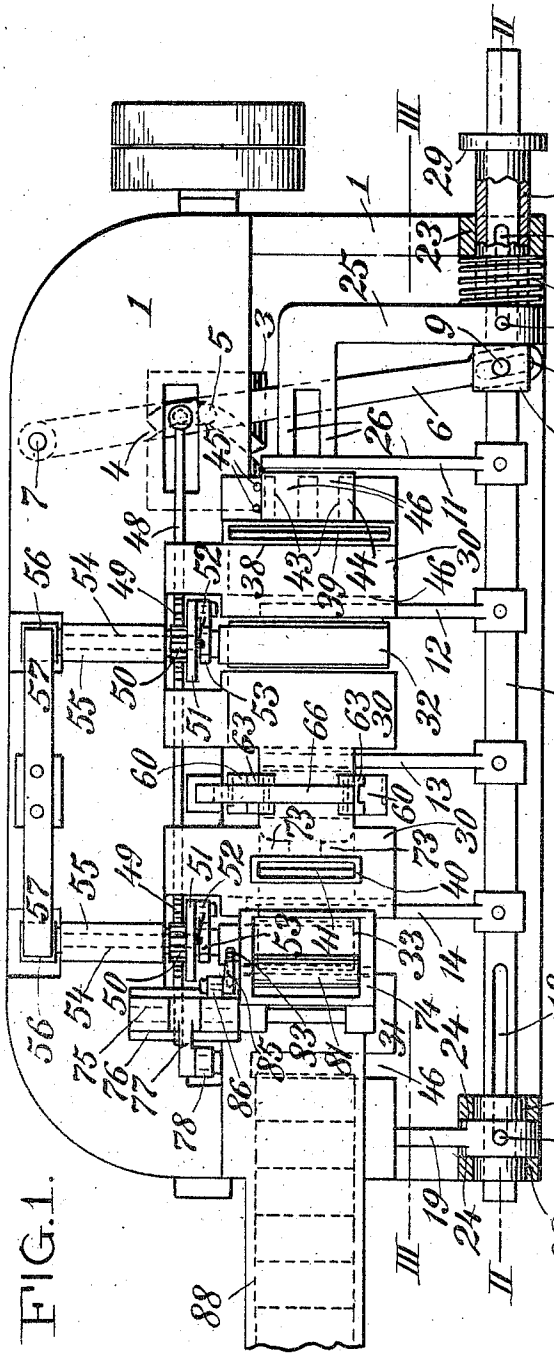

FIG. 1.

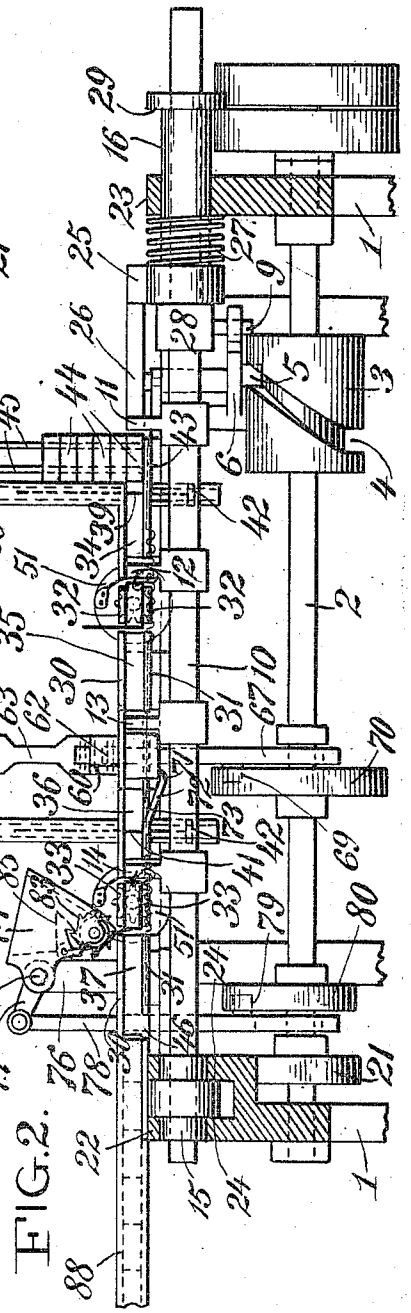

FIG. 2.

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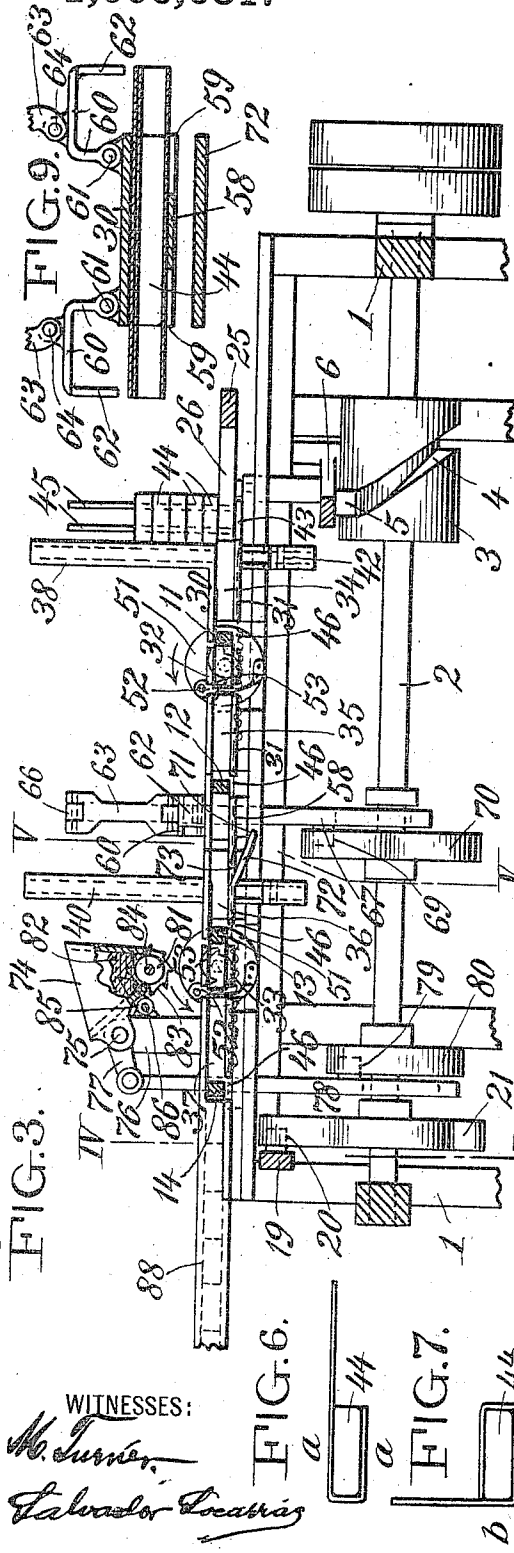

FIG. 3.

FIG. 6.

FIG. 7.

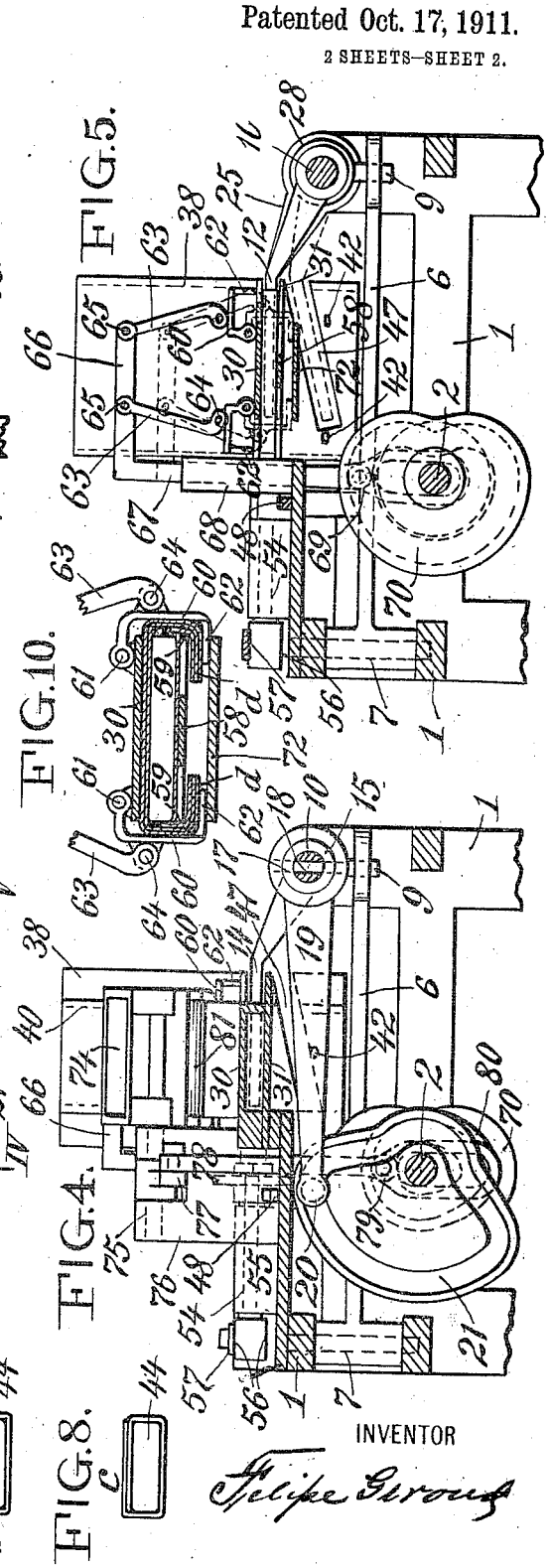

FIG. 5.

FIG. 4.

FIG. 8.

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FELIPE GIROUD, OF NEW YORK, N. Y.

WRAPPING-MACHINE.

1,006,081. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed February 2, 1911. Serial No. 606,142.

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 Wrapping-Machines, of which the following is a specification.

This invention relates to machines adapted to force an article and a wrapper through folding devices whereby the wrapper is folded upon the article.

The object of the invention is to provide a means whereby a succession of articles and wrappers are moved through the folding devices by successive intermittent movements, each movement of each of said articles and wrappers being accomplished by positive action of moving parts of the machine.

The invention consists of a series of plunger arms causing said movements of the articles and wrappers, said arms being secured to a rock-shaft having longitudinal reciprocating movement.

The invention further consists of certain details of construction relating to mechanism for folding and securing the wrappers.

In the accompanying drawings; Figure 1, is a sectional plan view of the machine. Fig. 2, is a sectional elevation on the line II—II of Fig. 1. Fig. 3 is a sectional elevation on the line III—III of Fig. 1. Fig. 4 is a cross section on the line IV—IV of Fig. 3. Fig. 5 is a cross section on the line V—V of Fig. 3. Figs. 6, 7 and 8 are diagrammatic views showing successive folds of a wrapper in one direction upon an article. Fig. 9 is a detail view showing a transverse section of the partially folded wrapper shown in Fig. 8, and also showing mechanism adapted to fold portions of the wrapper overhanging the article. Fig. 10 is a view showing said overhanging ends folded by means of said mechanism.

Mounted in suitable bearings in the main frame 1 is a driving shaft 2. Secured to shaft 2 is a cylinder 3 having a cam groove 4 in which rides a roller 5 attached to a lever 6, which is pivoted at 7 to the main frame. The cam 4 causes forward and backward oscillations of the lever 6. The free end of lever 6 is provided with a slot 8, which engaging a pin 9 secured to a shaft 10, causes longitudinal reciprocating movement of said shaft. Plunger arms 11, 12, 13 and 14 are secured to shaft 10 at equal distances apart, and the shaft has longitudinal movement in sleeves 15 and 16. Rotation of the sleeves with reference to the shaft is prevented by pins 17 passing through the sleeves and through slots 18 formed in the shaft. Forming part of sleeve 15 is an arm 19 provided with a roller 20, which engages a cam 21 secured to the driving shaft 2. Action of cam 21 on arm 19 causes sleeve 15, shaft 10 together with the plunger arms fixed thereto, and sleeve 16, to have an oscillating or rocking movement. Sleeves 15 and 16 rock in bearing 22, 23, and sleeve 15 is provided with shoulders 24 which prevent longitudinal movement in bearing 22. Forming part of sleeve 16 is an arm 25 which is provided at the free end with longitudinally extending fingers 26 approaching the rear side of plunger arm 11. A spring 27 forces the sleeve 16 against a collar 28 secured to the rock-shaft 10. Then during forward longitudinal movement of the rock-shaft, the sleeve 16, arm 25, and fingers 26 will follow collar 28, until checked by a shoulder 29 on the sleeve, which takes against the bearing 23.

A horizontal channel divided into sections having an opening along one side is formed by upper plates 30 and lower plates 31, and by means of pairs of plates forming forks 32, 33. The fork 32 is interposed between the channel sections 34 and 35 and the fork 33 is interposed between the channel sections 36 and 37. Channel section 34 is provided with a chute 38 for reception of a wrapper 39, and channel section 36 is provided with a chute 40 for reception of a wrapper 41, said chutes having supports 42 for sustaining the wrappers in such manner that the portion of wrapper extending above the channel exceeds the portion below the channel. Any suitable mechanism may be employed for feeding the wrappers successively to said chutes, and as such mechanism forms no part of the present invention, it is omitted. Lower plate 31 of channel section 34 is extended rearwardly to form supports 43 for a series of articles 44, said articles being placed one above another against guides formed by rods 45 and the rear wall of chute 38. Starting with the parts occupying the position shown in Figs. 1 and 2, the different channel sections, and forks 32, 33 being empty. Forward movement of plunger arm

11 will cause the lower article 44 to be moved against the wrapper 39, causing the wrapper to be folded upon said article as at *a*, *a*, by means of the upper plate 30 and the lower plate 31. As the fingers 26 on arm 25 follow plunger arm 11, said fingers will ride under the remaining articles and when the plunger arm 11 has moved the first article and partially folded wrapper into the fork 32, as shown in Fig. 3, the fingers 26 will be supporting the remaining articles. When the fingers 26 have reached the position shown in Fig. 3, further forward movement is prevented by means of the shoulder 29 on sleeve 16. Openings 46 are formed in the bottom plate 31, so that the plunger arms 11, 12, 13, 14 and the fingers 26, can be moved downward from the position shown in Fig. 3 to the position shown by dotted lines in Fig. 5. During the downward movement, the articles 44 are transferred from the supporting fingers 26, to the supports 43. Then by means of cam 4 acting on lever 6, backward longitudinal movement is imparted to the rock-shaft, whereby the plunger arms 11, 12, 13, 14 and fingers 26 are moved backward while in said lowered position, chutes 38, and 40 being cut away at 47 to permit such backward movement of plunger arms 11 and 13. During backward movement of lever 6, a bar 48 connected to said lever and having gear teeth 49 meshing with gear wheels 50, causes a half revolution of the disks 51 secured to said gear wheels. Pivoted upon disks 51 are spring pressed pawls 52. Pawls 52 by engagement with ratchet wheels 53 secured to forks 32, 33, cause a half revolution of said forks in the direction indicated by the arrows in Fig. 3. When this half revolution of forks 32, 33 occurs, the unfolded portion of the wrappers shown in Figs. 3 and 6, will take against the upper plate 30, causing the wrappers to be folded upon the articles, so that on completion of said half revolutions the unfolded portion of the wrappers will be extending upward as shown at *b*, in Figs. 2 and 7. Gear wheels 50 and the attached disks 51 turn loosely upon shafts 54, to one end of which shafts the forks 32, 33 and ratchet wheels 53 are rigidly secured. The shafts 54 rotate in bearings 55, and upon their outer ends are secured blocks having flattened faces 56 upon opposite sides. Bearing upon the faces 56 are flat springs 57 attached to the frame 1. The faces 56 have such relation to the forks 32, 33 that at the end of each half revolution of said forks the springs 57 acting upon said faces, causes said forks to coöperate with said channel sections to form a channel through which the articles and wrappers can be moved in a straight line.

It will be seen that backward movement of collar 28 will cause sleeve 16 to be moved back from the position caused by action of spring 27 and the shoulder 29, so that on completion of the backward movement of lever 6, the plunger arms 11, 12 and fingers 26, will occupy the position shown in Fig. 1. Then by means of cam 21, arm 19 will actuate the rock-shaft 10 and cause upward movement of the plunger arm 11, 12, and fingers 26; causing them to assume the position shown in Fig. 2. It will be seen that in this position, plunger arm 12 stands to the rear of the article and wrapper in the fork 32, so that as forward longitudinal movement of the rock-shaft causes plunger arm 11 and fingers 26 to repeat the operations previously described, the arm 12 will move the article and wrapper out of the fork 32 and into the channel section 35, whereby the upper plate 30 causes the upwardly extending portion of the wrapper to be folded upon the portion of the wrapper previously folded upon the article, as shown at *c* in Fig. 8. When plunger arm 11 has moved a second article and wrapper into the fork 32, plunger arm 12 will simultaneously have moved the first article and wrapper into range with a device for folding the portion of wrapper overhanging the ends of the article; as shown in Figs. 3 and 9. The lever 6 causing this forward movement will also have caused forward movement of the bar 48, resulting in backward rotation of disks 51 and the yielding pawls 52 without rotation of the ratchet wheels 53 and forks 32, 33; and causing the pawls 52 to reëngage the ratchet wheels 53 at the end of a half revolution of said disks 51. Rocking of shaft 10 will then cause plunger arms 12, 11, and fingers 26 to be lowered, followed by backward movement caused by lever 6. This backward movement of lever 6 also causes a forward half revolution of fork 32 in the manner previously described. It is during this backward movement of lever 6 that the wrapper folding mechanism represented in Figs. 3, 9 and 10 becomes operative.

The article with the wrapper folded as in Figs 8 and 9, rests upon a tongue 58 extending from the lower plate 31 of the channel section 36. As shown in Fig. 9 the wrapper overhangs the two ends of the articles, and the two edges 59 of the tongue 58. Two upwardly and horizontally extending arms 60 are pivoted at 61 to the top plate 30. The arms 60 are provided with fingers 62 extending vertically downward in range with the outer ends of said overhanging wrappers. The lower ends 63 are of links pivoted at 64 to the horizontal portion of said arms 60. The upper ends of said links are pivoted at 65 to a horizontal arm 66, forming part of a slide 67, said slide having vertical reciprocating movement in guides 68 secured to the main frame 1. Slide 67 is provided

with a roller 69 which engages a cam 70 secured to the driving shaft 2. Cam 70 causes downward movement of the slide 67, arm 66, and links 63; whereby arms 60 swing upon the pivots 61 resulting in movement of fingers 62 from the vertical to the horizontal position and causing said horizontal part of the arms to assume the vertical position, as shown in Fig. 10. By reference to Figs. 9 and 10, it will be seen that said swinging movement of the arms 60 causes the ends of the overhanging wrapper to be folded under the tongue 58 by means of the fingers 62 and that the portion of the wrapper overhanging the article is folded against the article by means of the arms 60. The fingers 62 are made narrower than said overhanging wrapper, in order that they may move past the edge 71 of an inclined plate 72, when being moved to the horizontal position *d*, shown in Fig. 10 by means of fingers 62. Plate 72 inclines downward from the lower plate of section 36, and extends a short distance into the path of folding of said end *d* of the wrapper. It will be seen that the wrapper will bend sufficient to permit its travel past the edge 71 of said inclined plate, and assume a position above said plate, so that on withdrawal of the fingers 62, the folded ends of said wrapper will be held by means of said inclined plate, as shown in Fig. 2. When the rock-shaft raises the plunger arms 13, 12, 11 and fingers 26 to the position shown in Fig. 2, cam 70 will have moved slide 67, arm 66 and links 63 upward, causing the swinging arms 60 to be raised as shown in Figs. 2 and 5. Forward longitudinal movement of the rock-shaft will now cause a third article and wrapper to be moved by plunger arm 11 into fork 32, simultaneous with movement of the second article and wrapper into range with said wrapper folding mechanism by means of plunger arm 12 and simultaneous with movement by plunger arm 13, of the first article and wrapper against a second wrapper which is folded upon the wrapped article and forced therewith into the fork 33, as shown in Fig. 3. It will be seen that during movement of the first article and wrapper from said folding mechanism to the wrapper in chute 40, the fold *d* of the wrapper resting on the incline 72 is forced upward by means of said incline, the tongue 58 being cut away at 73 to permit the fold *d* to seat itself against the fold of the wrapper on the under side of the wrapped article. As the plunger arms 13, 12, 11 and fingers 26 are lowered by means of the rock-shaft and then moved backward by lever 6, a half revolution of fork 33 will have folded the second wrapper upon the first wrapped article, as in Fig. 7, the swinging arms 60 will have folded the overhanging ends of the wrapper of the second article, as in Fig. 10, and a half revolution of fork 32 will have folded the wrapper upon the third article, as in Fig. 7.

A paste receptacle 74 is secured to a shaft 75 journaled on a standard 76. To shaft 75 is secured an arm 77 to which a downwardly extending rod 78 is connected, said rod being slotted at its lower end to enable it to ride on the main shaft 2. Rod 78 is provided with a roll 79 engaging a cam 80 which is secured to the main shaft. Cam 80 causes an up and down movement of rod 78 thereby causing an oscillating movement of arm 77 and shaft 75, carrying the paste receptacle 74. In the bottom of the paste receptacle is journaled a roller 81 having part of its surface in contact with the paste 82 and part exposed below the receptacle. A ratchet wheel 83 is secured to the shaft 84 of roller 81, and a pawl 85 is pivoted at 86 to the standard 76, so that as the receptacle swings upward as in Fig. 3, the roller 81 will be turned by action of the pawl 85 on the ratchet wheel 83, causing the surface of the roller to carry paste from the interior to the exterior of the receptacle. When the second wrapper upon the first wrapped article occupies the position shown in Fig. 7, the paste receptacle occupies the position shown in Fig. 3, and when the rock-shaft has moved the plunger arms 14, 13, 12, 11 and the fingers 26 to the position shown in Fig. 2, the paste receptacle will have swung to the lower position, causing the paste on the roller 81 to be applied to the upward extension of said second wrapper. Forward longitudinal movement of the rock-shaft will now cause a fourth article and wrapper to be moved by plunger arm 11 into fork 32, simultaneous with movement of the third article and wrapper into said wrapper folding mechanism by means of plunger arm 12, simultaneous with movement of the second wrapped article and a second wrapper into fork 33 by means of plunger arm 13, and simultaneous with movement of the first wrapped article and second wrapper into the channel section 37 by means of plunger arm 14. When this forward movement of plunger arm 14 occurs, the paste receptacle will move upward and as the forward movement of plunger arm 14 is continued the top plate 30 of channel section 37 will cause the paste coated extension of the second wrapper to be folded upon a previous fold of said second wrapper, as in Fig. 8, said paste serving to hold said folds of the second wrapper together.

It will be seen that the fold *d* of the first wrapper will be covered by the second wrapper, and that by securing the second wrapper with paste, the folds of the first wrapper will be held secure.

An extension 88 of the channel section 37 provides a receiving channel in which the

wrapped articles are successively moved along by succeeding wrapped articles.

Having described my invention what I claim is:—

1. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith, and a plunger adapted to move an article and a wrapper through one of said channels whereby the wrapper is folded upon the article, said plunger also causing said article and partially folded wrapper to be moved into said fork, means for causing a half revolution of said fork, whereby the wrapper is further folded upon the article; a plunger arm and means for actuating it, whereby said plunger arm forces said article and wrapper out of said fork and into said channel, thereby causing the wrapper to be further folded upon the article.

2. In a machine of the character described, a channel having upper and lower plates, a plunger adapted to move an article and a wrapper into said channel, whereby the wrapper is folded upon the article, said upper and lower plates being of less width than the wrapper overhanging the article, swinging folders above the overhanging ends of said partially folded wrapper, and adapted to fold said ends beneath said lower plate, an inclined plate extending forward from below said folded ends to said lower plate, notches formed in said lower plate; and means for moving said article and wrapper forward along said channel, whereby said inclined plate forces said ends through said notches and against the wrapper on said article.

3. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith, and a plunger arm adapted to move a previously wrapped article and a wrapper through one of said channels, whereby the wrapper is folded upon said wrapped article, said plunger also causing said wrapped article and partially folded wrapper to be moved into said fork, means for causing a half revolution of said fork, whereby the wrapper is further folded upon the article and caused to extend upwardly, means for applying paste to said upwardly extending wrapper; and a second plunger arm adapted to move said wrapped article and partially folded wrapper out of said fork and into the other channel, whereby the paste coated part of the wrapper is folded upon one of said folds of the wrapper.

4. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith, and a plunger adapted to move an article and a wrapper through one of said channels whereby the wrapper is folded upon the article, said plunger also causing said article and partially folded wrapper to be moved into said fork, means for causing a half revolution of said fork whereby the wrapper is further folded upon the article; a plunger arm adapted to move said article and wrapper out of said fork and into the other channel whereby the wrapper is further folded upon the article; and an opening along the side of the last named channel in line with the opening of said fork, whereby said plunger arm is permitted to move through said fork and along the last named channel, substantially as described.

5. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith, said channels having openings in line with the open end of said fork, a plunger arm adapted to move an article and a wrapper through one of said channels and into said fork, whereby the wrapper is folded upon the article; means for causing a half revolution of said fork whereby the wrapper is further folded upon the article; a second plunger arm adapted to move said article and wrapper out of said fork and into the other channel whereby the wrapper is further folded upon the article; said plunger arms being secured to a shaft having longitudinally reciprocating movements; means for rocking said shaft thereby causing forward movements of said plunger arms to be effected through said openings in the channels and the fork, said shaft rocking means causing said plunger arms to travel in another path during return movements caused by longitudinal reciprocations of said shaft.

6. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith said channel having openings in line with the open end of said fork, a shaft having a series of attached plunger arms, means for imparting forward longitudinal movement to said shaft whereby one of said plunger arms forces an article and a wrapper through one of said channels whereby the wrapper is folded upon the article, said plunger also causing said article and partially folded wrapper to be moved into said fork, means whereby said plunger arms are lowered from said channel and moved rearwardly, means for causing a half revolution of said fork whereby the wrapper is further folded upon the article, means for rocking said shaft whereby said plunger arms are moved to the first position in range with said channel and said openings, said means for imparting forward longitudinal movement to said shaft causing a second plunger arm to force said article and partially folded wrapper out of said fork into the other channel whereby the wrapper is further folded upon the article.

7. A machine of the character described comprising an intermittently rotating fork, a channel on either side in range therewith said channels having openings in line with the open end of said fork, a shaft having a series of attached plunger arms, means for rocking said shaft whereby said plunger arms are moved into range with said channel and said openings, means for imparting forward longitudinal movement to said shaft whereby one of said plunger arms forces an article and a partially folded wrapper out of said fork into one of said channels, causing said wrapper to be folded upon the article, another of said arms simultaneously forcing a second article and a second wrapper through the other channel, whereby the second wrapper is folded upon the second article, the last named plunger also causing said second article and partially folded second wrapper to be moved into said fork, means for reverse rocking said shaft whereby said plunger arms are moved out of range with said channel and said openings, means for imparting backward longitudinal movement to said shaft, and means for causing a half revolution of said fork whereby the second wrapper is further folded upon the second article.

8. A machine of the character described, comprising a plurality of wrapper folding means, a shaft having a series of attached plunger arms, means for causing longitudinally reciprocating movements of said shaft, means for causing a rocking movement of said shaft at the end of each of said reciprocating movements, means whereby forward reciprocation of said shaft after one of said rocking movements causes said series of plunger arms to force a corresponding series of articles and wrappers through said wrapper folding means; and means whereby reverse rocking movement of said shaft after said forward longitudinal movement, causes said plunger arms to be moved away from said wrapper folding means, the return longitudinal movement of said shaft and arms occurring after the last named rocking movement of said shaft.

9. A machine of the character described comprising a wrapper folding channel having an opening along one side a longitudinally reciprocating shaft a plunger arm secured to said shaft, supporting fingers to the rear of said plunger arm, a support for a series of articles placed one above another the lowest article being in range with said channel, means for supporting a wrapper in front of said articles, means for rocking said shaft whereby said plunger arm and supporting fingers are moved up into range with said channel and channel opening, whereby forward longitudinal movement of said shaft causes said plunger arm to force the lowest article and said wrapper into said channel, said fingers serving to support the remaining articles, means for reverse rocking said shaft whereby said arm and fingers are lowered causing the remaining articles to be deposited upon the first named support, and causing said plunger arm to travel below said channel during return longitudinal movement of said shaft.

10. A machine of the character described comprising a wrapper folding channel having an opening along one side, a longitudinally reciprocating shaft, a plunger arm secured to said shaft, a spring pressed slide on said shaft, said slide carrying supporting fingers to the rear of said plunger arm, a stop limiting the forward movement of said slide, a support for a series of articles placed one above another, the lowest article being in range with said channel, means for supporting a wrapper in front of said articles, means for rocking said shaft whereby said plunger arm and supporting fingers are moved up into range with said channel and channel opening, whereby forward longitudinal movement of said shaft causes said plunger arm to force the lowest article and said wrapper into said channel, said stop causing said fingers to come to rest beneath and to support the remaining articles, means for reverse rocking said shaft whereby said arm, and said supporting fingers are lowered, causing the remaining articles to be deposited upon the first named support.

11. A machine of the character described comprising a plurality of wrapper folding means a shaft having a series of plunger arms fixed equal distances apart along its length, means for imparting forward movement to said shaft and plunger arms, and means whereby one of said plunger arms forces an article and a wrapper through said wrapper folding means to a position beyond the position which the second plunger arm occupied at the beginning of said movement, means whereby said shaft and attached plunger arms are returned to the first position, said means for imparting forward movement to said shaft causing the second plunger arm to force said article and wrapper through said wrapper folding means to a position beyond the position which the third plunger arm occupied at the beginning of said forward movements.

12. A machine of the character described comprising a plurality of wrapper folding means, a shaft, a series of plunger arms fixed in a line at equal distances apart along the length of said shaft, means for imparting forward movement to said shaft and plunger arms, and means whereby the forward movement of one of said plunger arms forces an article and a wrapper through said wrapper folding means to a position beyond the position which the second plunger arm occupied at the beginning of said movement,

means whereby said shaft and attached plunger arms are returned to the first position, said means for imparting forward movement to said shaft causing the second plunger arm to force said article and wrapper to a position beyond the position which the third plunger arm occupied at the beginning of said forward movements, and means whereby said wrapper is folded in a direction transverse to the line of travel of said article and wrapper.

13. A machine of the character described comprising channel sections, and a series of wrapper folding devices arranged in line therewith, a series of plunger arms, and the machine having means for actuating said plunger arms whereby one of said plunger arms forces an article and a wrapper through one of said channel sections, thereby causing the wrapper to be folded upon the article, said plunger arm also moving said article and partially folded wrapper into one of said wrapper folding devices, said means for actuating said plunger arms causing a second plunger arm to force said article and wrapper into a second channel section whereby the wrapper is further folded, said second plunger arm also moving said article and wrapper into a second wrapper folding device.

14. A machine of the character described comprising channel sections having upper and lower plates, a series of plunger arms, and the machine having means for actuating said plunger arms whereby one of said plunger arms forces an article and a wrapper through one of said channel sections thereby causing said wrapper to be partially folded, a wrapper folding mechanism causing said wrapper to be folded at right angles to said upper plates, said means for actuating said plunger arms causing a second plunger arm to force said article and partially folded wrapper through a second channel section, whereby said wrapper is further folded, the upper and lower plates of said second channel section being of less width than the wrapper overhanging the article, swinging folders above the overhanging ends of said partially folded wrapper and adapted to fold said ends beneath the lower plate of said second channel section, an inclined plate extending forward from below said folded ends to said lower plate, notches formed in said lower plate; and means for moving said article and wrapper forward along said channel, whereby said inclined plate forces said ends through said notches and against the wrapper on said article.

15. A machine of the character described comprising channel sections, and a series of wrapper folding devices arranged in line therewith, a series of plunger arms, means whereby one of said plunger arms forces an article and a wrapper through one of said channel sections whereby the wrapper is folded upon the article, said plunger arm also moving said article and wrapper into one of said wrapper folding devices, means whereby a second plunger arm forces said article and wrapper into a second channel section, whereby the wrapper is further folded, said second plunger arm also moving said article and wrapper into a second wrapper folding device, and means whereby a third plunger arm forces said article and wrapper into a third channel section whereby the wrapper is folded, substantially as described.

16. A machine of the character described comprising channel sections, and a series of wrapper folding devices arranged in line therewith, a series of plunger arms, means whereby one of said plunger arms forces an article and a wrapper through one of said channel sections whereby the wrapper is folded upon the article, said plunger arm also moving said article and wrapper into one of said wrapper folding devices, means whereby a second plunger arm forces said article and wrapper into a second channel section, whereby the wrapper is further folded, said second plunger arm also moving said article and wrapper into a second wrapper folding device, means whereby a third plunger arm forces said article and wrapper into a third channel section whereby the wrapper is folded and means whereby said article and folded wrapper, and a second wrapper are forced by said third plunger into a third wrapper folding device.

17. A machine of the character described comprising a series of wrapper folding devices arranged in line one after another, a series of plunger arms, means whereby one of said plunger arms forces an article and a wrapper into one of said wrapper folding devices, means whereby a second plunger arm forces said article and wrapper into a second wrapper folding device, and means whereby a third plunger arm forces said article and folded wrapper, and a second wrapper into a third wrapper folding device.

18. A machine of the character described comprising a series of wrapper folding devices arranged one after another in line, a paste applying device, a receiving channel and a series of plunger arms; means whereby one of said plunger arms forces an article and a wrapper into one of said wrapper folding devices, means whereby a second plunger arm forces said article and wrapper into a second wrapper folding device, means whereby a third plunger arm forces said article and folded wrapper and a second wrapper into a third wrapper folding device, means for actuating said paste applying device whereby paste is applied to

an unfolded part of said second wrapper, and means whereby a fourth plunger arm forces said article and wrappers into said receiving channel, whereby said paste coated portion of the second wrapper is folded, substantially as described.

19. A machine of the character described comprising channel sections and a series of wrapper folding devices arranged in line therewith, a series of plunger arms, means whereby one of said plunger arms forces an article and a wrapper through one of said channel devices, whereby the wrapper is folded upon the article, means whereby a second plunger arm forces said article and wrapper through a second channel section and into a second wrapper folding device, whereby the wrapper is further folded, said second wrapper folding device comprising a tongue supporting the partially folded wrapper and inclosed article, said tongue being of less width than the wrapper overhanging both the article and said tongue, swinging folders above the overhanging ends of said partially folded wrapper, and adapted to fold said ends beneath said tongue, a plate extending below said tongue into the path of a yielding edge of said ends, whereby said ends are held by said plate after withdrawal of said swinging folders.

20. A machine of the character described comprising a series of wrapper folding devices arranged in line one after another a receiving channel, a series of plunger arms, means whereby one of said plunger arms forces an article and a wrapper into one of said wrapper folding devices, means whereby a second plunger arm forces said article and wrapper into a second wrapper folding device, said second wrapper folding device comprising a tongue supporting the partially folded wrapper and inclosed article, said tongue being of less width than the wrapper overhanging both the article and said tongue, swinging folders above the overhanging ends of said partially folded wrapper, and adapted to fold said ends beneath said tongue, an inclined plate extending from said receiving channel into the path of a yielding edge of said ends, whereby said ends are held by said inclined plate after withdrawal of said swinging folders; and means whereby a third plunger arm forces said article and wrapper into said receiving channel whereby said inclined plate forces said ends against the wrapper on said article.

21. A machine of the character described comprising channel sections and an intermittently rotating fork, said channel sections having an opening along one side, a plunger arm adapted to move an article and a wrapper through one of said channel sections whereby the wrapper is folded upon the article, said plunger arm also causing said article and partially folded wrapper to be moved into said fork, means for causing a half revolution of said fork, whereby the wrapper is further folded upon the article; a second plunger arm, means for imparting forward movement to said second plunger arm through said fork and along a second channel section and the side opening thereof, whereby said article and wrapper are forced from said fork into said second channel section thereby causing the wrapper to be further folded upon the article.

22. A machine of the character described, comprising a channel composed of sections formed by upper and lower plates and an intermittently rotating fork, said channel sections having a lateral opening, a plunger arm in range with said channel, means for supporting an article in front of said plunger arm, and for supporting a wrapper in front of said article, means for imparting forward movement to said plunger arm whereby the article and wrapper are forced through one of said channel sections thereby causing the wrapper to be folded upon the article by said channel plates, and causing the article and wrapper to be forced into said fork, a second plunger arm extending into said channel through said opening, means whereby said plunger arms are lowered and moved rearwardly, means for causing a half revolution of said fork, whereby the upper plate of said channel section causes the wrapper to be folded in such manner upon the article that an unfolded portion of the wrapper projects upward, means for raising said plunger arms in such manner that the first plunger occupies the first named position, and the second plunger arm stands to the rear of the partially wrapped article in said fork and means whereby the second plunger arm forces said partially wrapped article from said fork into another channel socket whereby the upper plate of the last named channel section causes said upwardly extending portion of the wrapper to be folded upon the wrapper on said article.

23. A machine of the character described, comprising a channel formed by channel sections and an intermittently rotating fork, said channel sections having openings in line with the open end of said fork, a wrapper folding mechanism, said channel having openings on opposite sides in range with said wrapper folding mechanism, a plunger arm in range with said channel, means for supporting an article in front of said plunger arm and for supporting a wrapper in front of said article, means for imparting forward movement to said plunger arm whereby said article and wrapper is forced through one of said channel sections causing the wrapper to be folded upon the article and causing the article and wrapper to be

forced into said fork; a second plunger arm extending into said channel through said opening, means whereby said plunger arms are lowered and moved rearwardly, means for causing a half revolution of said fork, whereby the wrapper is folded in such manner upon the article, that an unfolded portion of the wrapper projects upward, means for raising said plunger arms in such manner that the first plunger arm occupies the first position, and the second plunger stands to the rear of the partially wrapped article in said fork, means whereby the second plunger arm forces said partially wrapped article into a second channel section, whereby said upwardly extending portion of the wrapper is folded upon the wrapper on said article, and also causes the article and wrapper to be forced into range with said wrapper folding mechanism and means for actuating said wrapper folding mechanism whereby overhanging portions of the wrapper projecting through said openings on opposite sides of the channel are folded.

24. A machine of the character described, comprising a channel composed of sections formed by upper and lower plates and an intermittently rotating fork, said channel having an opening along one side, forward and rear plunger arms extending into said channel through said opening, means whereby said plunger arms are lowered and moved rearwardly, means for causing a half revolution of said fork whereby the upper plate of one of said channel sections causes the wrapper of a partially wrapped article in said fork to be folded in such manner upon the article that an unfolded portion of the wrapper projects upward, means for raising said plunger arms in such manner that the forward plunger stands to the rear of the partially wrapped article in said fork, and the rear plunger arm stands to the rear of said channel section, means for supporting a second article in front of said rear plunger arm and means for supporting a second wrapper in front of said article means for imparting forward movement to said plunger arms, whereby the forward plunger arm forces said partially wrapped article from said fork into another channel section, whereby the upper plate of the last named channel section causes said upwardly extending portion of the wrapper to be folded upon the wrapper on said article, and the rear plunger arm forces the second article and wrapper through the first channel section, causing the second wrapper to be folded upon the second article by said channel plates, and also causing said second article and wrapper to be forced into said fork.

25. A machine of the character described comprising a wrapper folding mechanism, a channel, means for moving an article and a wrapper through said wrapper folding mechanism and channel, whereby the wrapper is partially folded upon the article, said article being of less width than the wrapper overhanging the article, folders pivoted above said article and having swinging free ends above the overhanging ends of said partially folded wrapper, a vertically reciprocating plunger, links connecting said folders to said plunger, means for actuating said plunger whereby said folders are swung downward causing said ends to be folded beneath said article.

Signed at New York city in the county of New York and State of New York this 31st day of January A. D. 1911.

FELIPE GIROUD.

Witnesses:
H. TURNER,
SALVADOR SOEARRAS.