H. DE ESCOBALES & F. P. AMPUDIA.

WRAPPING MACHINE.

APPLICATION FILED FEB. 17, 1913.

1,084,593.

Patented Jan. 13, 1914.

4 SHEETS—SHEET 1.

FIG. 1.

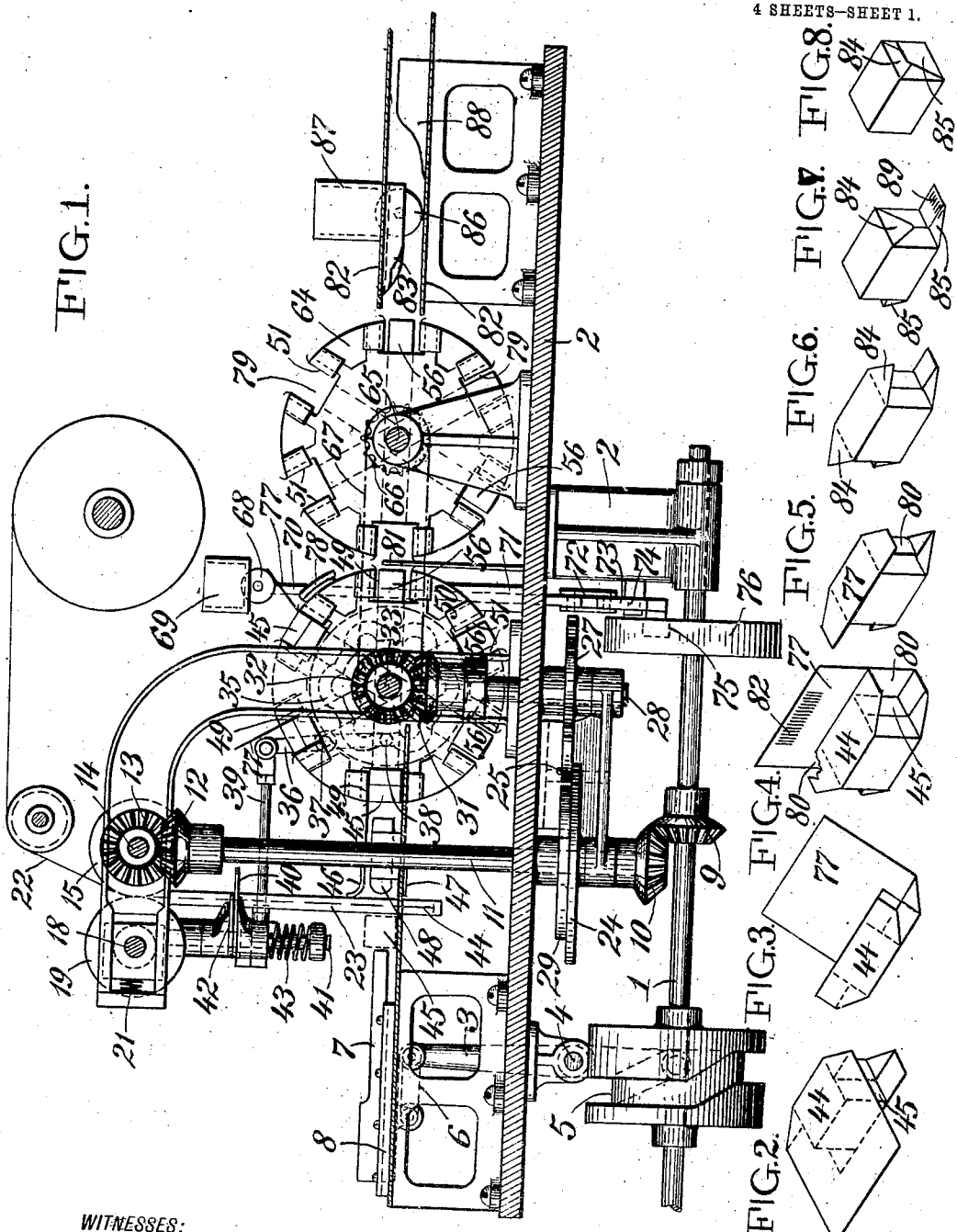

FIG. 8.

FIG. 7.

FIG. 6.

FIG. 5.

FIG. 4.

FIG. 3.

FIG. 2.

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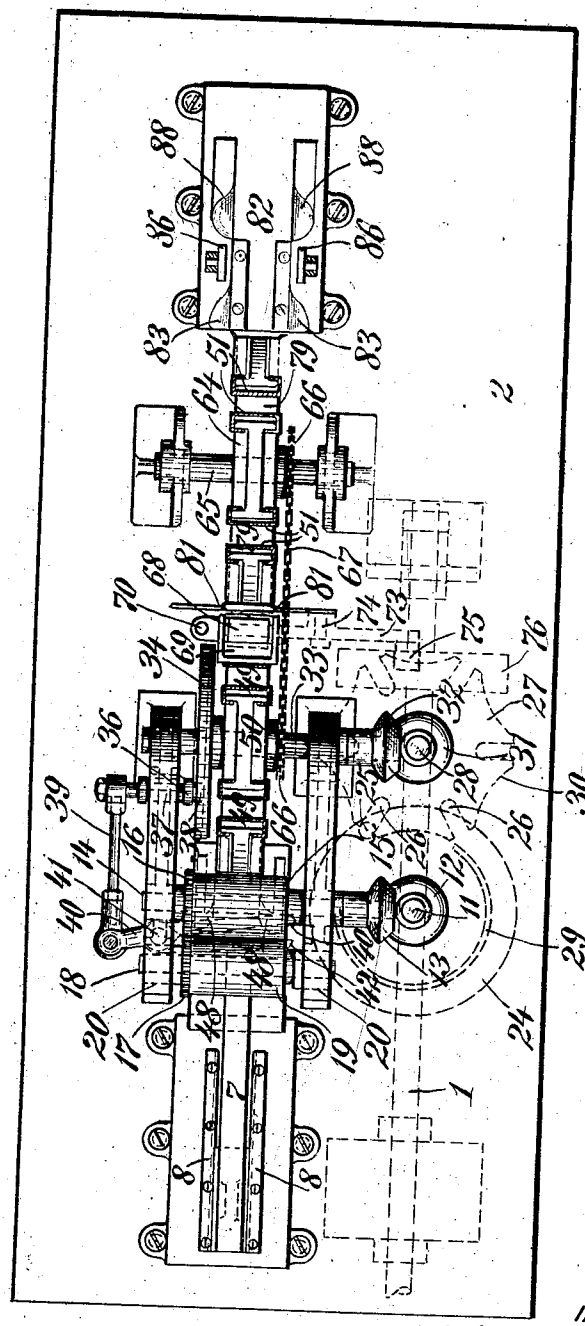
4 SHEETS—SHEET 2.

FIG. 9.



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4 SHEETS—SHEET 3.

FIG. 10.

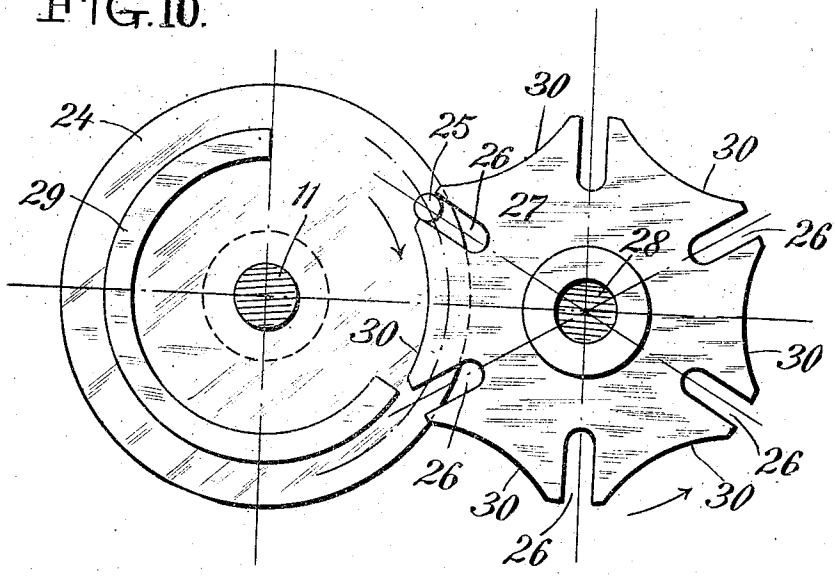


FIG. 11.

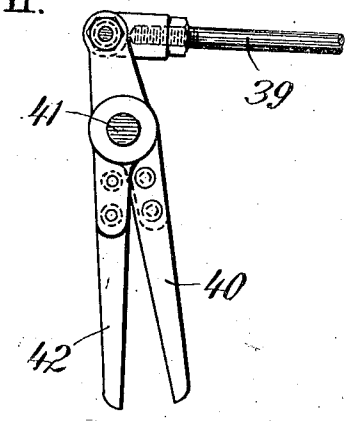


FIG. 12

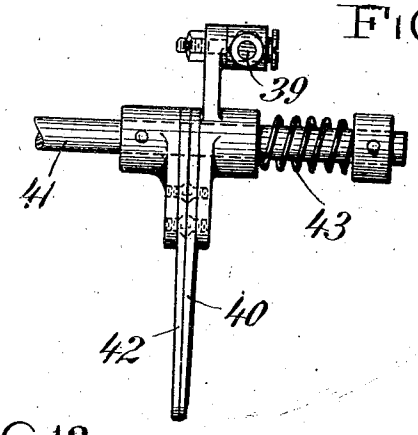
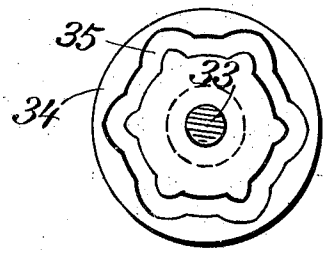


FIG. 13.



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4 SHEETS—SHEET 4.

FIG. 14.

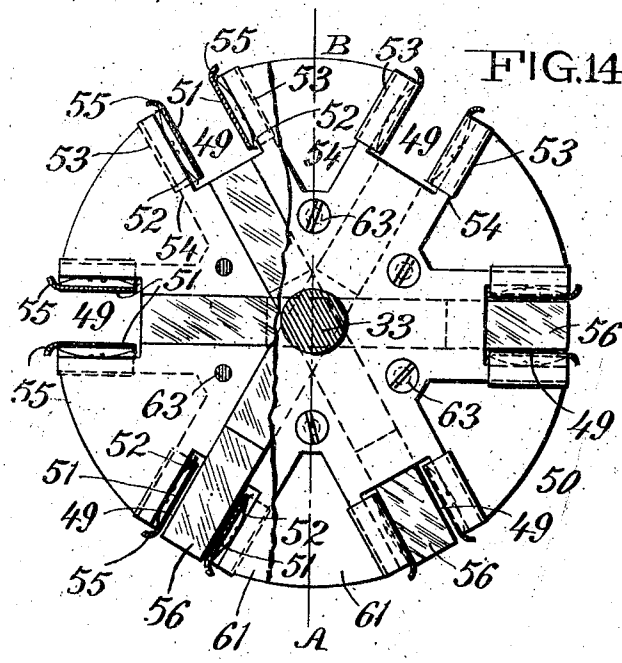

FIG. 15.

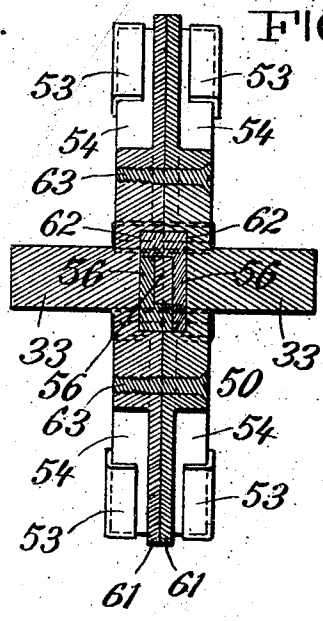

FIG. 16.

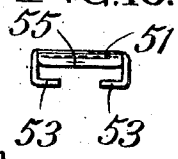

FIG. 17.

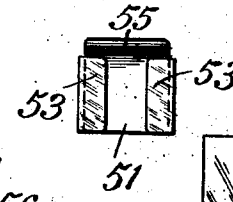

FIG. 18.

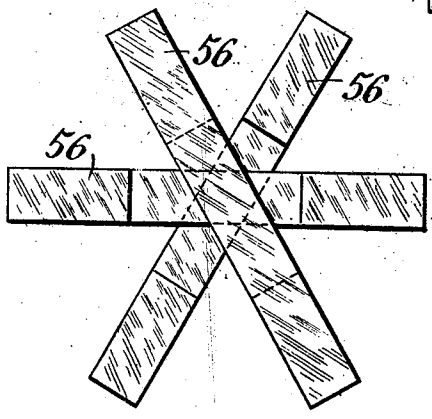

FIG. 19.

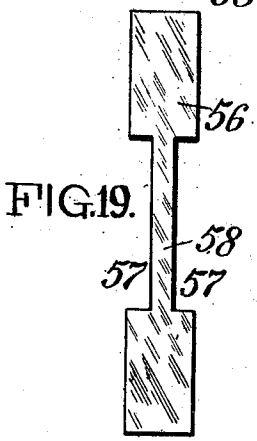

FIG. 20.

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UNITED STATES PATENT OFFICE.

HILARIO DE ESCOBALES AND FRANCIS P. AMPUDIA, OF NEW YORK, N. Y.

WRAPPING-MACHINE.

1,084,593. Specification of Letters Patent. Patented Jan. 13, 1914.

Application filed February 17, 1913. Serial No. 748,940.

To all whom it may concern:

Be it known that we, HILARIO DE ESCOBALES, a citizen of the Island of Porto Rico, and FRANCIS P. AMPUDIA, a citizen of Spain, both residents 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 in which an article and wrapper are passed through folding devices whereby the wrapper is folded upon the article.

The object of the invention is to provide a means by which this can be done in a simple and efficient manner.

The invention consists of two adjacent wheels and means for imparting an intermittent rotary movement thereto. Said wheels are provided with a series of receptacles adapted to receive partially wrapped articles, and are provided with plungers adapted for reciprocating movement in the receptacles on diametrically opposite sides thereof.

Continuously revolving rollers cause paper to be fed between a pair of scissors, into guides for a wrapper. A movable member of the scissors is connected to said means for imparting an intermittent rotary movement to said wheels, in such a manner that the paper is cut by the scissors during the movement of said wheels.

The machine is provided with a reciprocating plunger by which an article and wrapper are forced through stationary folders, and into one of said receptacles on one of said wheels, whereby the plunger in said receptacle is forced into the receptacle on the diametrically opposite side of said wheel, causing a partially wrapped article in the last named receptacle to be moved into a receptacle of the second wheel, whereby the plunger in said receptacle of the second wheel is forced into the receptacle on the diametrically opposite side thereof whereby the partially wrapped article therein is forced out.

In the accompanying drawings Figure 1 is a sectional side elevation of the machine. Figs. 2 to 8, inclusive, are perspective views showing different stages of folding of the wrapper upon the article. Fig. 9 is a plan view of the machine. Fig. 10 is a detail view, showing the means for imparting an intermittent rotary movement to said wheels. Figs. 11 and 12 are detail views showing the construction of the scissors. Fig. 13 is a view of the cam for actuating the scissors. Fig. 14 is a side view of one of said wheels. Fig. 15 is a section on the line A, B, of Fig. 14. Figs. 16 and 17 are detail views showing certain movable parts of said receptacles. Figs. 18, 19 and 20 are detail views of said plungers having reciprocating movement within said wheels.

A horizontal driving shaft 1 is journaled in suitable bearings on the frame 2 of the machine. A lever 3 is centrally pivoted at 4 on the frame 2. One end of lever 3 is provided with a roller which engages a cam 5 on shaft 1. The other end of lever 3 is connected by a link 6 to a plunger 7 which is adapted for horizontal reciprocating movement in guides 8.

Secured to shaft 1 is a bevel gear wheel 9 in mesh with a bevel gear wheel 10 which is secured to the lower end of a vertical shaft 11. To the upper end of shaft 11 is secured a bevel gear wheel 12 which is in mesh with a bevel gear wheel 13 secured to a shaft 14. Secured to shaft 14 is a roller 15 and a gear wheel 16. Gear wheel 16 is in mesh with a gear wheel 17 which is secured to a shaft 18. Also secured to shaft 18 is a roller 19, the shaft 18 being journaled in movable bearings 20 which are pressed by a spring 21 so that the roller 19 will maintain a yielding pressure against the paper 22 which is pressed between the rollers 16 and 19. Said rollers serve to feed the paper downward into the guides 23.

Secured to vertical shaft 11 is a horizontal disk 24, having a vertically extending pin 25. As shown in Fig. 10; during part of the rotation of shaft 11, pin 25 engages one of a series of six slots 26 formed in a horizontal disk 27. Disk 27 is secured to a vertical shaft 28. During the engagement of pin 25 with any one of the slots 26; the disk 27 and therefore the shaft 28 will move one-sixth of a revolution. During the time pin 25 is out of engagement with the slots 26, a vertically extending concentric projection 29 on disk 24 will ride against a concave surface 30 formed on the edge of disk 27, which will cause the disk 27 and shaft 28 to be held stationary during the time pin 25 is out of engagement with the slots 26.

Secured to vertical shaft 28 is a bevel gear wheel 31 which is in mesh with a bevel gear wheel 32 on a horizontal shaft 33. It

will be evident that the intermittent movements imparted to vertical shaft 28, as above described, will be transmitted to the horizontal shaft 33, by means of the gears 31 and 32. Secured to horizontal shaft 33 is a wheel 34 having a cam groove 35. A lever 36 is centrally pivoted at 37 on the frame 2. One end of the lever 36 is provided with a roller 38 which engages the cam groove 35 of wheel 34. The other end of lever 36 is connected by a link 39 to the movable blade 40 of a pair of scissors which are mounted upon a vertical rod 41. The stationary blade 42 is secured to rod 41 and the movable blade 40, pivoted upon the rod, is held against the stationary blade by means of the spring 43. The cam groove 35 is so shaped that its action upon the above described connection to the scissors is such that the movable blade remains stationary during the time the shaft 33 is stationary. When the shaft 33 is moved, the cam 35 will cause movement of the blade 40, causing the paper blank 44 to be cut free from the paper 22, which is fed from the supply roll indicated in Fig. 1.

An article 45 to be wrapped is placed between the plunger 7 and the wrapper blank 44. Forward movement of the plunger will force the article and the wrapper between the upper plate 46 and the lower plate 47 and between the two side folders 48, causing the wrapper to be folded upon the article in the manner shown in Fig. 2. The forward movement of plunger 7 is sufficient to force the article and partially folded wrapper into one of a series of six receptacles 49 which are formed in the periphery of a wheel 50. The receptacles 49 are each provided with movable walls 51 which are pressed by a spring 52, so that the walls maintain a yielding pressure upon the wrapper of an article. The walls 51 are provided with inward turned edges 53 which take against flanges 54 thus serving to limit the movement of the walls by means of the springs 52. The outer edges of the walls 51 are inclined to form guides 55 for the partially wrapped articles as they are forced into the receptacles 49. The partially wrapped article as it is forced into a receptacle, pushes a plunger 56 out thereof and into the receptacle diametrically opposite. The wheel 50 is provided with three plungers 56. One of said plungers has a recess 57 on each side of a central bar 58, as shown in Fig. 19. Two of the plungers are formed, as shown in Fig. 20, with a deep recess 59 on one side and a bar 60 on the other side. The bar 60 of one of these plungers is adapted to fit in one of the recesses 57, and the bar 60 of the other plunger is adapted to fit in the other recess 57. The wheel 50 is formed of two disks 61, each having grooves 62 adapted to receive the plungers assembled as shown in Figs. 14, 15 and 18. The two disks 61 are fastened together by means of the screws 63. The disks 61 forming the wheel 50 are provided with extensions forming the shaft 33.

It will be evident that the previously described intermittent movements imparted to shaft 33 will also be imparted to wheel 50, and also to another similarly constructed wheel 64 on a shaft 65, which is driven by chain wheels 66 and chain 67 from shaft 33.

Two of the one-sixth movements of wheel 50 will cause the partially wrapped article shown in Fig. 2 to be moved to the position shown in Fig. 3. When in this position, a paste wheel 68 supplying paste from a receptacle 69 is moved downward, causing paste to be applied to the wrapper, as is shown in Fig. 1. The paste receptacle 69 is secured to a rod 70 which has vertically reciprocating movements in a guide 71. The lower end of rod 70 is connected by a link 72 to one end of a lever 73 which is pivoted at 74 to the frame 2. The other end of lever 73 is provided with a roller 75 which engages a cam 76 on shaft 1, by which it is actuated.

One-sixth movement of the wheel 50 will cause the partially wrapped article shown in Fig. 3 to be moved to the position shown in Fig. 4. During this movement of wheel 50, the wrapper flap 77 will take against the stationary folder 78, whereby the flap will be folded against the article, in the manner shown in Fig. 4. It will be evident that as this article and wrapper fills this receptacle 49, the plunger 56 will fill the receptacle 49 diametrically opposite. Then as the plunger 56 is pushed out in the manner previously described, this partially wrapped article will be forced from the receptacle 49 which it occupies, and into one of the six receptacles 79 of wheel 64. When this occurs, the side portions 80 of the upturned flap 77 shown in Fig. 4 will take against two stationary side folders 81, and at the same time, the portion of flap 77 projecting above the article will take against a wall 51 of the receptacle 79, causing the flap 77 and the side portions 80 thereof to assume the position shown in Fig. 5. It will be evident that the paste 82 on flap 77 will cause the flap to adhere to the wrapper 44 previously folded upon the article.

When wheel 64 has made a half revolution, the partially wrapped article shown in Fig. 5 will be turned bottom side up, as is shown in Fig. 6. Then as another partially wrapped article is forced into the receptacle 79 diametrically opposite, a plunger 56 of wheel 64 will thereby be forced into the first named receptacle 79, causing the partially wrapped article contained therein to be forced out and between the upper and lower plates 82. The upper plate 82 is provided with two downwardly pro-

between the adjacent wheels, whereby said wrapper is folded upon the partially wrapped article, said paste applied to said wrapper serving to hold the wrapper in place; and said movement of said wrapped article in said receptacle of the second wheel causing the plunger in said receptacle of the second wheel to be forced into the receptacle on the diametrically opposite side thereof, whereby the partially wrapped article therein is forced out and between said second stationary folders, thereby causing remaining flaps to be folded upon the wrapped article.

4. A wrapping machine comprising two adjacent intermittently rotating wheels, each wheel having a series of receptacles adapted to receive partially wrapped articles and each wheel having plungers adapted for reciprocating movement in the receptacles on diametrically opposite sides thereof; a pair of stationary side folders between said adjacent wheels, stationary folders on the diametrically opposite side of one of said wheels and second stationary folders on the diametrically opposite side of the other wheel, a stationary folder adapted during the movement of one of said wheels to take against the wrapper of a partially wrapped article in one of said receptacles, whereby said wrapper is folded and caused to rest between said adjacent wheels, means whereby an article and wrapper are forced between the stationary folders on the diametrically opposite side of said wheel, thereby causing the wrapper to be folded upon the article, said means causing the partially wrapped article to be forced into a receptacle of the first named wheel, whereby the plunger in said receptacle is forced into the first named receptacle whereby the partially wrapped article therein is forced out and into a receptacle of the second wheel, said pair of stationary side folders between said adjacent wheels during movement of the article taking against said wrapper, thereby causing side flaps to be folded upon the partially wrapped article, and said receptacle in the second wheel having a wall which during movement of the article, takes against said wrapper resting between the adjacent wheels, whereby said wrapper is folded upon the partially wrapped article; and said movement of said wrapped article in said receptacle of the second wheel causing the plunger in said receptacle of the second wheel to be forced into the receptacle on the diametrically opposite side thereof, whereby the partially wrapped article therein is forced out and between said second stationary folders, thereby causing remaining flaps to be folded upon the wrapped article.

Signed at New York city in the county of New York and State of New York this 13th day of February A. D. 1913.

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