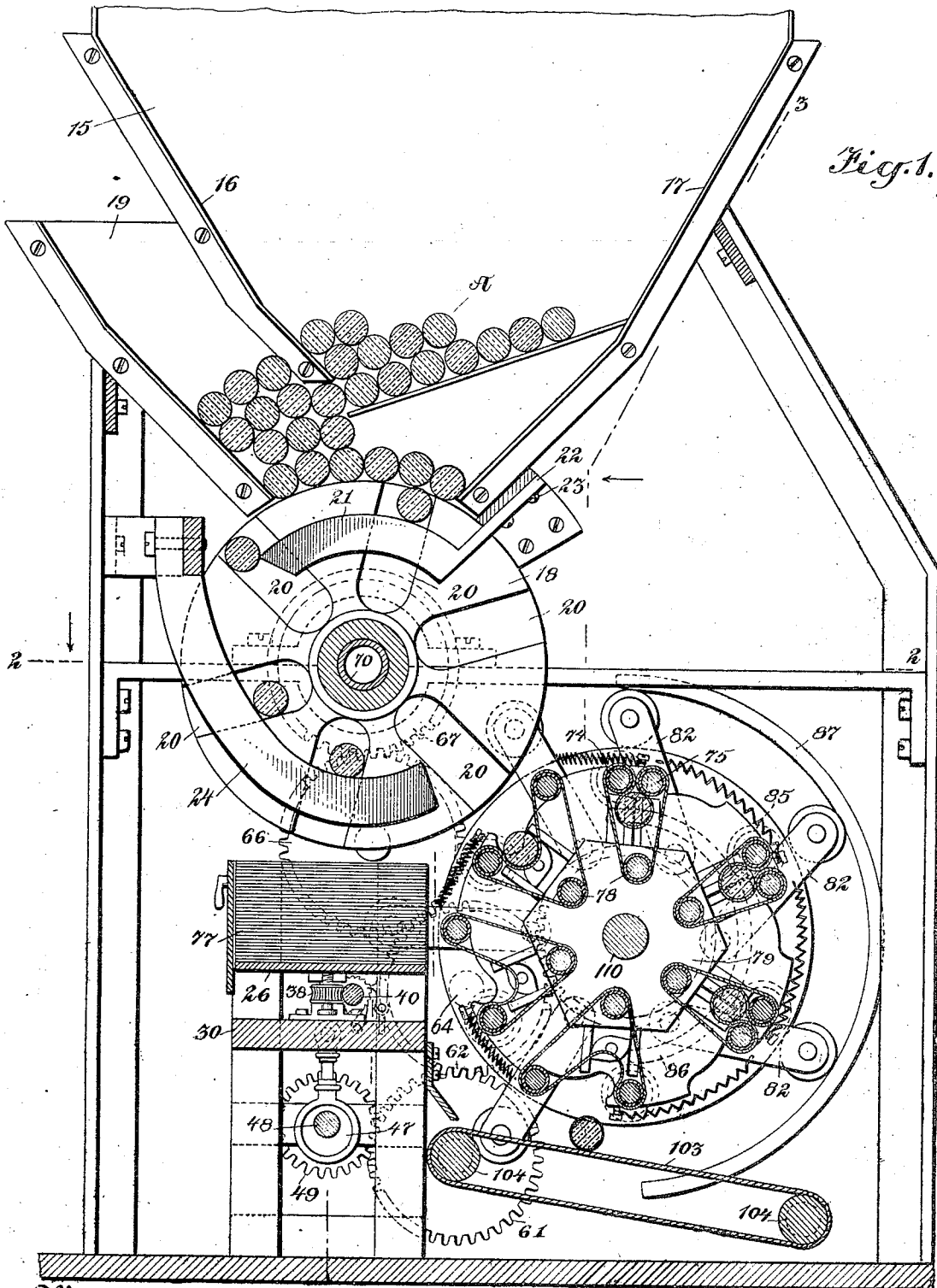


E. C. THORSCHMIDT.
CANDY WRAPPING MACHINE.
APPLICATION FILED DEC. 7, 1910.

1,108,027.

Patented Aug. 18, 1914.

6 SHEETS—SHEET 1.



Witnesses

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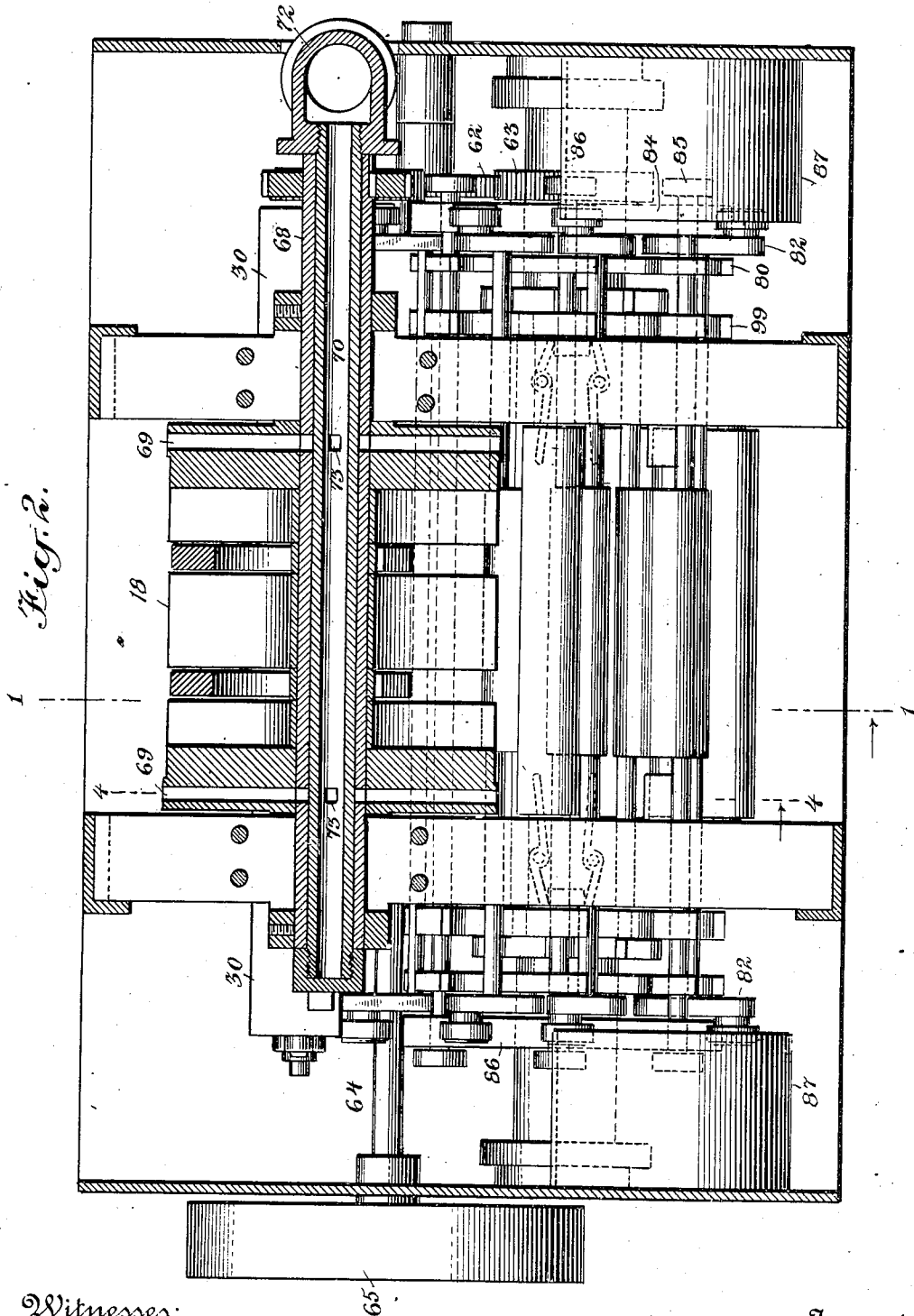
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6 SHEETS—SHEET 2.



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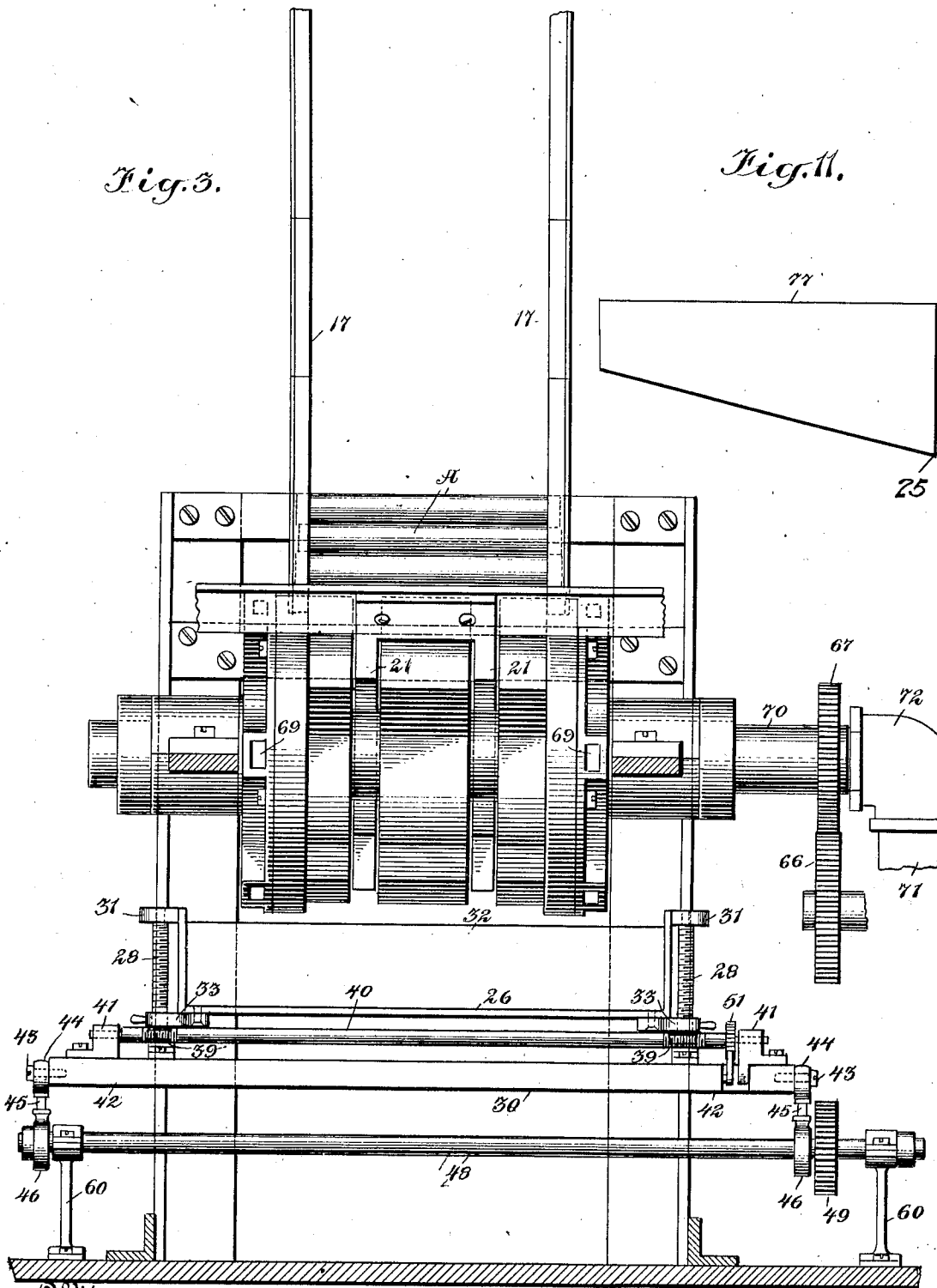
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6 SHEETS-SHEET 3.

Fig. 3.

Fig. 11.



Witnesses:

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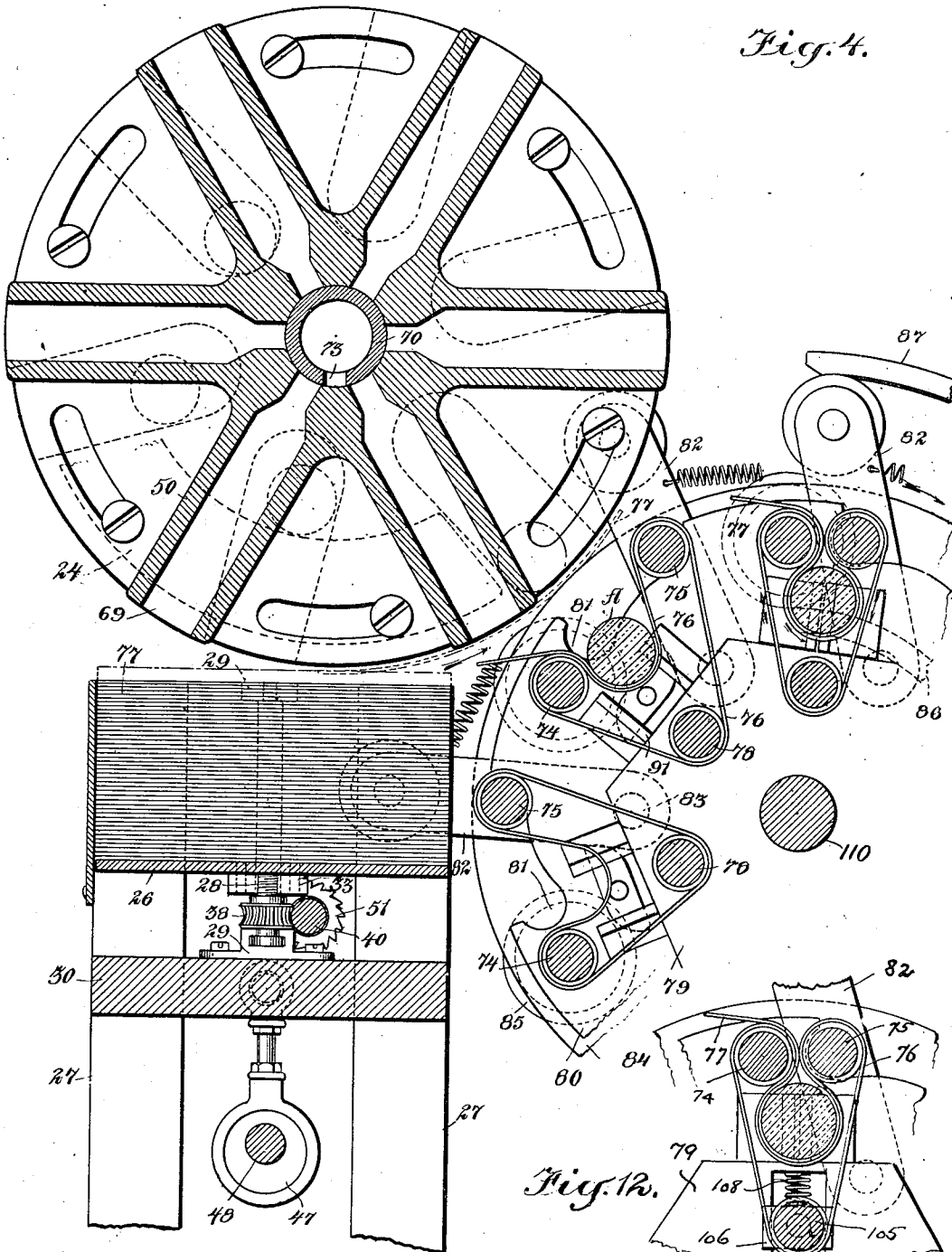
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6 SHEETS—SHEET 4.



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6 SHEETS-SHEET 6.

Fig. 6.

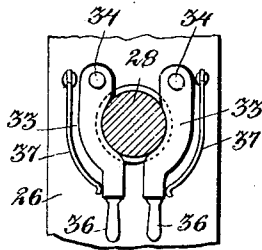


Fig. 5.

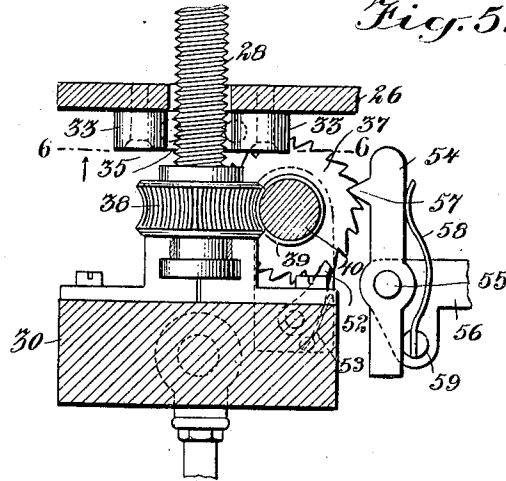


Fig. 8.

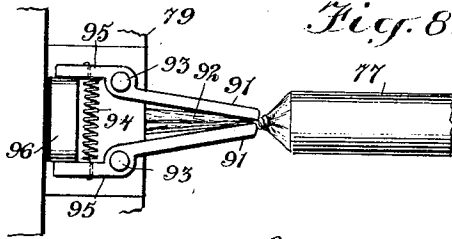


Fig. 7.

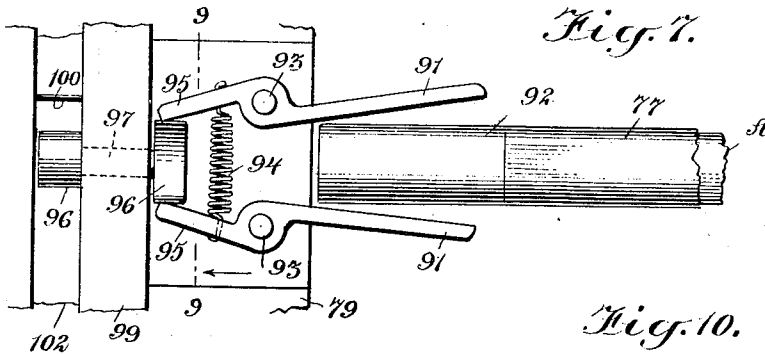


Fig. 10.

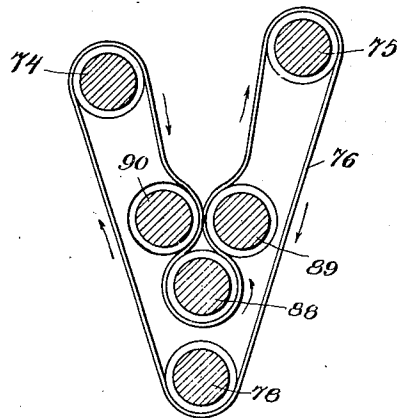
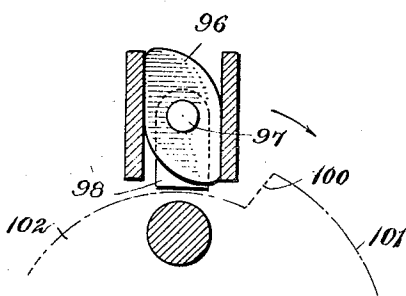


Fig. 9.



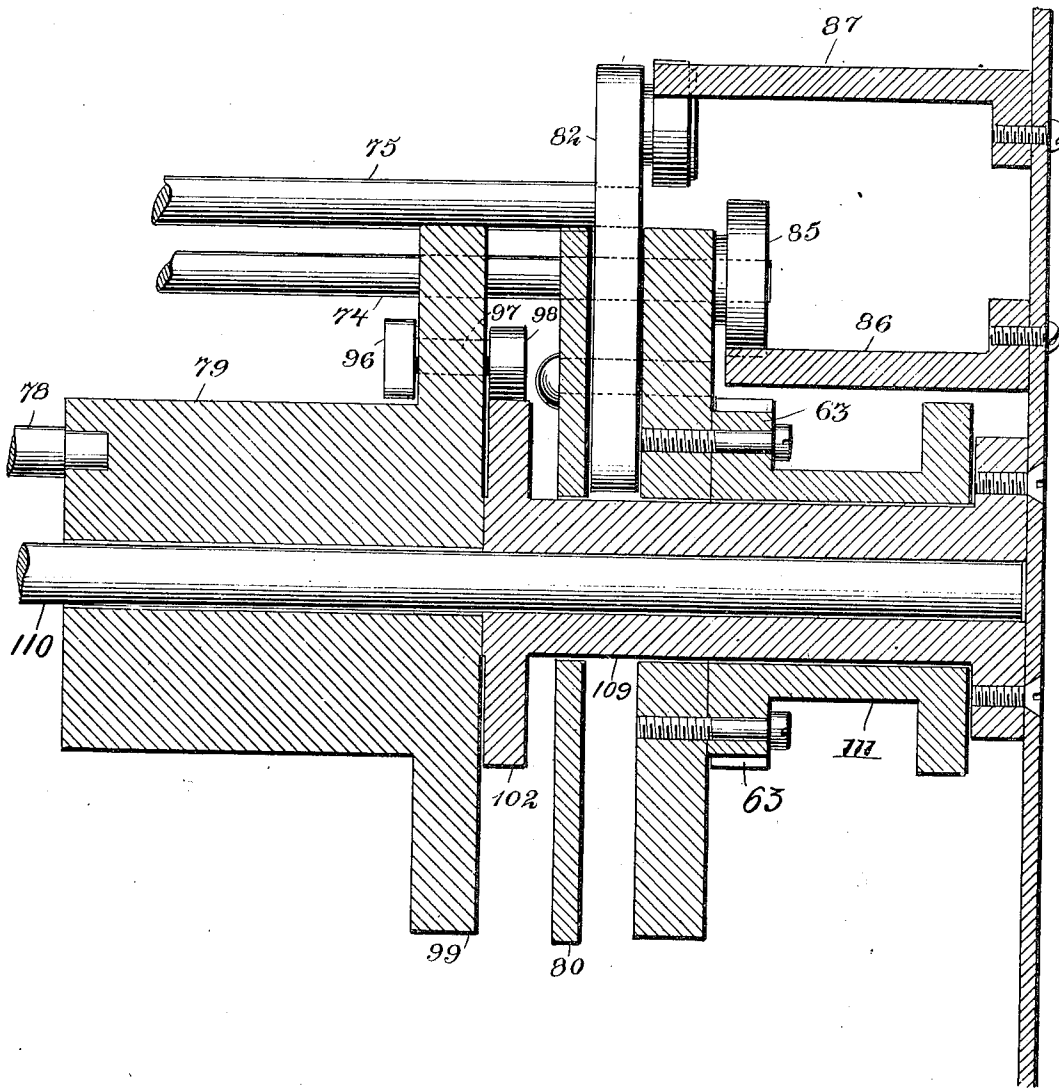
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1,108,027.

6 SHEETS—SHEET 6.

Fig. 13.



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UNITED STATES PATENT OFFICE.

ERNEST C. THORSCHMIDT, OF NEW YORK, N. Y.

CANDY-WRAPPING MACHINE.

1,108,027.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed December 7, 1910. Serial No. 595,990.

To all whom it may concern:

Be it known that I, ERNEST C. THORSCHMIDT, citizen of the United States, and a resident of New York city, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Candy-Wrapping Machines, of which the following is a specification.

10 This invention relates to wrapping machines, and more particularly to machines for wrapping stick candy.

Among the principal objects which the invention has in view are: to provide an automatic machine which receives the candy sticks in bulk and unwrapped, and delivers the sticks successively to a carton or other packing device each neatly and securely wrapped in waterproof paper; to wrap each stick of candy in such manner that the outer edge of the wrapper is laid tightly against the stick; and to provide a continuous and rapid action machine.

One embodiment of the present invention is disclosed in the accompanying drawings, wherein—

Figure 1 is a vertical cross section taken on the line 1—1 in Fig. 2; Fig. 2 is a horizontal section taken on the line 2—2 in Fig. 1; Fig. 3 is a longitudinal section taken on the line 3—3 in Fig. 1; Fig. 4 is a detail view, on an enlarged scale, taken on the line 4—4 in Fig. 2; Fig. 5 is a detail view, on an enlarged scale, in vertical section, of the supporting frame of the paper magazine, showing in side elevation the elevating mechanism for the said magazine; Fig. 6 is a detail view, on an enlarged scale, and in section, taken on the line 6—6 in Fig. 5; Fig. 7 is a detail view, on an enlarged scale, of the gripper fingers for the wrapping papers, showing the fingers in their opened position, and in conjunction with the same a candy stick and paper wrapper; Fig. 8 is a detail view, on reduced scale, showing the gripping fingers in position to grip the wrapping paper; Fig. 9 is a detail view, in section, taken on the line 9—9 in Fig. 7; Fig. 10 is a detail view, on an enlarged scale, showing in section the wrapping rollers and continuous belt therefor; Fig. 11 is a detail view of the wrapping paper; Fig. 12 is a detail view of a modified form of the wrapping rollers; and Fig. 13 is a vertical cross section of the end of the ma-

chine, showing a method of supporting the moving and stationary parts.

The candy sticks A, to wrap which is the purpose of the machine shown in the accompanying drawings, are placed in a hopper 15. The sticks are delivered to the said hopper in bulk, the upper end of the hopper being open. The hopper is filled with reference to the operation of the extracting and wrapping machinery disposed below the same. The side walls of the hopper are disposed in parallel and vertical relation, the front wall 16 and the rear wall 17 arranged to converge toward the bottom. The wall 16 is shortened as it approaches the wall 17 to provide a delivery opening for the hopper. It is at the delivery opening that one of the sticks A is delivered to the extracting drum 18. Adjacent the opening of the hopper 15 is formed a channel 19, as shown best in Fig. 1 of the drawings, providing thereby a spillway or relief channel by which a certain number of the sticks may be forced to prevent the jamming of the sticks at the throat or delivery opening of the hopper 15.

The drum 18 is provided with a series of disk-like members wherein are formed pockets 20, 20. The pockets 20, 20 are provided to receive from the hopper 15 each a single stick of candy as each passes under the delivery opening of the said hopper. The width of the pockets 20 is sufficient to receive freely a stick of candy, but insufficient to receive more than one. The pockets 20 are of a depth, as shown in Fig. 1 of the drawings, extending to near the axial center of the drum 18. The sticks are prevented from dropping to the bottom of the pockets 20 by guard rails 21, 21.

The rails 21, 21 are connected by means of a back plate 22, which is fixedly secured by means of fastening devices 23 to the standing frame of the machine. The rails 21, 21 are extended parallel to the periphery of the drum 18, and removed from the periphery thereof at a distance slightly less than the diameter of a stick of the candy being handled. This arrangement provides that a stick of candy when held on the rails 21 is rolled thereover by the drum 18, and said candy stick rolling frees itself more readily from the superposed sticks of candy pressing down upon it. The rails 21 are extended beyond the opening of

the hopper 15 and the channel 19. As the sticks of candy pass over the end of the rails 21, 21 they are permitted to drop to the bottom of the pockets 20, which are upturned and in an inclined position at this point in the rotation of the drum 18. The stick of candy is thus transferred to that part of the pockets 20 adjacent the core of the drum. The sticks of candy thus deposited in the pockets are held adjacent the inner ends thereof by means of auxiliary rails 24, 24. The rails 24, 24 are disposed, as shown in Fig. 1 of the drawings, to maintain the sticks of candy at the inner end of the pockets 20, 20 until the stick is rolled over the end of the rails 24, the ends being disposed as shown in Fig. 2 of the drawings, so that at the moment of delivery of the stick of candy therefrom the pocket 20 is as shown in said Fig. 1 disposed above the rolling drum and above the wrapping mechanism thereon mounted. The purpose in maintaining the stick of candy at the inner end of the pockets 20 when the said pockets are inverted is to provide a drop for the candy. This drop, as hereinafter stated, forces the wrapping paper which the said drum has picked up into its proper position in the wrapping mechanism.

The sticks of candy are wrapped in sheets of paper prepared and cut as shown in Fig. 11 of the drawings. It will be noted that the one edge of the paper is inclined to produce a corner 25 extended beyond the body of the paper, which corner is the last fragment of paper rolled upon the cylinder of the stick of candy. By employing paper of this shape it will be noted that the exposed edge of the wrapper is spirally disposed on the completely wrapped stick of candy, laying the edge thereby neatly and tightly upon the completed stick. This method of wrapping articles of this character is found to be advantageous in all respects. The paper thus cut is delivered in packets and deposited on a platform 26. The platform 26 is mounted in guided relation between standards 27, 27, and is supported by screws 28, 28. The screws 28, 28 are pivotally mounted in pivot blocks 29, 29 supported upon an elevator 30 and brackets 31, 31. The paper, when mounted on the platform 26 is further guided by means of a face plate 32 extended lengthwise of the said platform.

The platform 26 has pivotally mounted thereon a plurality of gripper jaws 33, 33. The jaws 33, 33, as seen best in Figs. 5 and 6 of the drawings, are pivoted at 34, 34 on the platform 26, and are provided midway their length with screw threaded sections 35, the threads wherein are adapted to register with the threads formed on the screws 28. The jaws 33, 33 are provided with handles

36, 36 and are normally closed upon the screws 28 by means of flat springs 37, 37. The jaws 33, 33 are opened only when it is desired to lower the platform 26 to the lower end of the screws 28, 28.

It will be observed that as the screws 28, 28 are rotated the engagement of the said screws with the jaws 33, 33 lifts the platform 26 to carry the same gradually toward the upper end of the screws 28. It will also be seen that the feed of the screws 28 must compensate for the delivery successively of each of the sheets of paper on the platform 26, as the same are removed from the top by the drum 18, as hereinafter set forth. The screws 28, 28 are each provided with a worm wheel 38 wherewith is engaged a worm gear 39 formed at each end of a shaft 40. The shaft 40 is extended lengthwise of and beneath the platform 26, and mounted in bearings formed in blocks 41, 41 mounted upon and supported by the elevator 30.

The elevator 30 is guided between the standards 27, 27, the ends 42, 42 thereof being extended between the said standards. At the outer extremities of the ends 42, 42 are provided pivot bolts 43, 43 on which the collars 44, 44 of eccentric rods 45, 45 are formed. The eccentric rods 45, 45 are provided with collars 46, 46 at their lower ends to fit eccentrics 47, 47 fixedly mounted on a driven shaft 48. As the shaft 48 is rotated, for which purpose a gear wheel 49 is fixedly mounted on the said shaft, the eccentrics 47, 47 reciprocate vertically the elevator 30. The eccentrics 47 are provided to produce a given lift to the elevator 30 and to the platform 26 and packet of paper carried thereon. This lift is provided to press the upper sheet of the packet of paper on the platform 26 against the ends of the tubes 50, 50 provided at each end of the drum 18. It is to compensate for the gradually diminishing height of the packet of paper that the platform 26 is gradually lifted, so that with each elevation of the packet, and the elevator 30 supporting the same, the top sheet of paper is pressed against the ends of the tubes 50.

Mounted fixedly on the shaft 40 is a ratchet wheel 51. The ratchet wheel 51 is engaged by a pawl 52, normally held in engagement by a flat spring 53. The pawl 52 serves to prevent the retraction of the wheel 51 as the same is advanced by a spur detent 54. The detent 54 is pivotally mounted on a pin 55 held in a bracket 56 rigidly secured to and extended from the side of the standard 27 adjacent the wheel 51. The spur 57 formed on the detent 54 is held pressed against the ratchet 51 by means of a flat spring 58. The flat spring 58 is anchored in a post 59.

It will be observed that the elevator 30, being thus provided with the ratchet wheel 51 and the standing structure adjacent the

said elevator being provided with the detent 54 adapted to engage successively the teeth of the ratchet wheel 51, the said ratchet wheel is engaged and rotated gradually by the detent 54. The gearing is calculated so that the shaft 40 is rotated sufficiently by each engagement of the detent 54 to turn the worm gears 38 and screws 28 connected therewith, just sufficiently to raise the platform 26 a distance equal to the thickness of each sheet of wrapping paper forming the packet resting on the said platform.

The shaft 48 is mounted in bearings formed at the upper ends of standards 60, 60. The shaft is driven by any suitable train of gears, that in the present instance being shown as the transmission gear wheels 61 and 62, and the driving gear wheel 63 rigidly mounted on a driving shaft 64. The driving shaft 64 is rotated by any suitable means, that shown in the drawings being a belt driven pulley 65.

The gear wheel 62 is tooth engaged with a gear wheel 66, which in turn is tooth engaged with a gear wheel 67. The gear wheel 67 is fixedly mounted on a sleeve 68, on which is fixedly mounted the drum 18. Hence the drum 18 and the shaft 48 are rotated in harmony, the relative rate of rotations being ascertained and fixed, the ratio between the gear wheel 61 and the gear wheel 49 being such as to produce one lift of the elevator 30, platform 26, and packet carried thereby, as each of the tubes 50 is presented to the packet, and at about a perpendicular angle thereto, at which angle the packet closes completely the opening aperture in each of the channels 69 formed in the said tubes.

The paper is caused to adhere to the tubes 50 by reason of a rarefaction of the air formed in the channels 69 as each of the said tubes are pressed against the top of the packet. The sheet of paper affected by the suction within the channel 69 is the uppermost sheet of the packet. The rarefaction of air in each of the said channels 69 is produced by the air contained in the said tube passing within the hollow of a tube 70, the inner chamber whereof is in communication with an air pumping mechanism of any suitable form or character. The tube 70 is stationary and is in open communication with a duct 71 through an elbow union 72, both connected with the suction end of a suitable air exhausting engine. The inner chamber of the tube 70 is connected alternately with each of the channels 69 by means of a passage 73.

The channels 69 and the inner chamber of the tube 70 are in communication, as will be seen by reference to Fig. 4 of the drawings, when the channel 69 is in contactual relation with the packet supported on the platform 26. The communication thus success-

sively established between each channel 69 and the tube 70 is maintained until the channel passes out of engagement with the passage 73. At this instant it will be observed that the sheet of paper which the tube 50 has extracted from the top of the packet on the platform 26 is carried forward by the rotation of the drum 18, until the forward end of the paper, as shown in dotted lines in Fig. 4, is disposed above the opening between the drums 74 and 75. It will also be observed that by reason of the width of the paper, and the relation of the tubes 50 following the pockets 20 shown in dotted lines in Fig. 4, the forward or squared end of the paper is disposed across the open end of the pocket 20. It will also be observed that at this instant the drum 18 is rotated to a position where the pocket 20 in front of the active tube 50 has carried the stick of candy therein contained beyond the support of the rails 24, 24, permitting the stick of candy to drop upon the paper, which drop of the candy carries the forward edge of the paper down between the drums 74 and 75 upon a belt 76, to seat the said belt more firmly in position, and at the same time breaks the seal at the end of the channel 69, freely releasing thereby the hold of the tube 50 on the paper.

The successive operations of the pockets 20, 20 and tubes 50, 50 and the paper feeding mechanism is obvious. The operation continues until the machine is arrested, or the supply of candy sticks in the hopper 15 is exhausted.

The sheets of paper 77 are wrapped about the candy sticks by the belts 76, 76. To support the belts 76, 76 the drums 74, 75 and 78 are provided. The drums 78, 78 are mounted in bearings formed in poly-lateral disks 79 which are mounted upon the driving shaft 64. The drums 74, 74 are pivotally mounted in bearings in disks 80 and 84, the peripheries whereof are serrated to form recesses 81, 81. The recesses 81 are provided to receive the drums 75 when the same are moved toward the drums 74, and to provide for a suitable separation between the sections of the belt 76 rolling over the said drums 74 and 75 when the said drums are thus approximated. The drums 75 are suitably mounted in levers 82, 82, which levers are pivoted at 83, 83 between the disks 80 and 84.

It is to rotate the drum 74, and through the said drum 74 the drums 78 and 75, by means of the belt 76, that I have provided the roller wheels 85, 85. It will be observed that when the belts 76 are drawn snug upon the drums 74, 75 and 78, as they are by the interposition of the sticks of candy A, and when the lever 82 is thrown over to approximate the drum 75 to the drum 74, the rotation of the drum 74 rotates the said mentioned drums and the stick of candy A

resting within the loop formed by the belts 76, said stick being pocketed between the three drums, as shown at the top of Fig. 4 of the drawings. In this manner the stick of candy and the paper wrapped thereupon are rotated about a self-contained center, the said stick of candy and the main portion of the wrapper thereby rotating in juxtaposed relation to grippers for holding the empty and extended ends of the wrapper.

It is to rotate the wheels 85 that I have provided the segmental circular tracks 86, 86. The forward ends of the tracks 86 are shown in dotted lines in Fig. 4 of the drawings, being disposed so that the wheels 85 ride upon the tracks after the levers 82 have been forced over to throw the drum 75 in position to surround, with the belt, the stick of candy A. From this position until the wheel 85 passes over the opposite end of the track 86, which is below the shaft 64, the drums and candy stick, together with the wrapped paper surrounding the said candy stick, are continually rolled within the loop formed in the belts 76. It is by this means that the paper is rolled about the candy sticks.

The levers 82, 82 are forced over to approximate the drum 75 to the drum 74 by means of a semi-circular drum 87. The arc of the circle of the drum 87 is slightly greater than the arc of the circle of the track 86. The ends of the drum 87 slightly overlap the ends of the track 86. By this arrangement there is secured an action on the part of the drum 75 whereby the said drum is moved toward the drum 74 prior to the commencement of the rotation of the candy stick, and is maintained after the suspension of the said rotation.

In Fig. 10 of the drawings I have shown a modified form of the invention, and the part thereof controlling the belts 76, wherein the said belt 76 is elongated, and is guided by idlers 88, 89 and 90. The operation of the drums 75, 74 and 78 is the same in all respects as that above described. The reason for the modification shown in said Fig. 10 of the drawings is that in some instances, and particularly in machines of large size, it is advantageous to hold the belt 76 in pocket form without depending upon the fall of the candy from the pockets 20, 20 to depress the belt between the drums 74 and 75, as above described.

During the operation of rolling the candy sticks, and after the wrapper has been completely formed, and prior to the delivery of the wrapped candy stick, the ends of the paper wrapper are twisted to hold the wrapper tightly upon the candy sticks.

The twist of the paper above referred to is effected primarily by the jaws 91, 91 closing on the overhanging ends 92, 92 of the paper wrapper 77. The jaws 91, 91 are

pivoted at 93, 93 on the edge of the disks 79 and on the straight sides thereof. The jaws 91, 91 are normally separated, as shown in Fig. 7 of the drawings, by a spring 94 which extends between the short ends 95, 95 extended from said jaws on the opposite side of the pivots 93, 93. The ends 95, 95 bear upon and ride the edge surface of a double extended cam 96, which is fixedly mounted on a pivot shaft 97, at the opposite end whereof is fixedly secured a trailer block 98. The pivot shaft 97 is extended through a disk 99. The block 98 is deflected, and the shaft 97 rotated by the said block striking upon a bolster 100 of the cam 101 of a stationary disk 102. The cam 101 is provided with a length adapted to maintain the jaws 91, 91 in closed position while the candy stick is being rolled sufficiently often to twist the paper end between the portion of the extended end 92 held between the jaws 91 and the end of the candy stick A to form a lock for the wrapper. The cam 101 is so disposed that the bolster 100 thereof engages the trailer block 98 after the drums 74, 75 and 78 and belts 76 have completely wrapped the paper 77 about the candy stick A. The tail end of the cam 101 is disposed with reference to the track 86 and the drum 87 to drop the trailer block 98 to the lower level of the disk 102 prior to the wheel 85 leaving the track 86.

When the candy sticks A are thus wrapped, having the ends twisted and the paper tightly drawn, the same are delivered from the drums 74, 75 upon a delivery belt 103. The belt 103 is endless and is mounted on drums 104, 104. The delivery end of the belt 103 is disposed in any convenient position with reference to the carton employed for packing the candy.

Thus it will be seen that in the operation of a machine constructed and arranged in accordance with the drawings herewith, and as above described, candy sticks are delivered in bulk to the hopper 15, from which they are separated or extracted by means of the pockets 20 and moved thereby from under the delivery end of the hopper 15 while supported on the rails 21; that at the ends of the rails 21, and while the pockets 20 are still upwardly inclined, the sticks are dropped to the inner end of the said pockets; that they are maintained during a certain portion of the remainder of rotation by means of the rails 24 at the inner ends of the said pockets; that as each pocket 20, containing its candy stick, is passed over the packet of sheets of wrapping papers, one of the said sheets is removed from the said packet in such manner that its forward edge is held under the pocket containing the candy stick; that as the pocket containing the candy stick and the sheet of wrapping paper now carried by the drum forming the said

pocket reaches a certain point of delivery from the said drum, and when the wrapping paper is disposed over the gapped wrapping members, the candy stick is released and dropped into engagement with the rolling or wrapping mechanism carrying with it the interposed wrapping paper; that when the candy stick and paper are thus delivered to the rolling mechanism, the members for engaging the same are closed and rolled to infold the candy sticks with the wrapping paper; that when the wrap has been completely formed the extended ends of the paper are grasped and held non-rotatively while the candy stick and wrapping paper held thereby are rotated, thus forming a twist or stricture in the wrapping paper adjacent the ends of the candy stick; that the ends are released prior to the wrapped sticks arriving at the delivery station; and that when the sticks have so arrived they are delivered to a conveyer by which they are conveyed to a carton or suitable packing receptacle. All of the actions excepting the feeding of the machine with successive packets of wrapping paper and with candy sticks are automatic and power operated.

At Fig. 12 of the drawings there is shown a modified form of the drums for rolling the candy stick and wrapping paper therefor. In the modified form the drum 105 corresponding to the drum 78 in the preferred form is mounted in bearing boxes 106, which boxes are radially slidable in slots 107 formed in the disks 79. The boxes 106 are normally maintained at near the rotary center of the disks 79 by means of spiral springs 108. By means of this arrangement the belt 76 is permitted latitude of adjustment not provided for in the usual form, and which latitude provides for the introduction into the machine of candy sticks of irregular diameter; thus, when sticks of greater diameter are introduced into the machine, the belt 76 folding about the greater circumference of the candy, draws outward the drum 105, compressing the spring 108. In other respects the modified form of the machine is the same as in the preferred form.

In Fig. 13 is shown a construction for holding the disk 102 by which the cam 96 and the trailer block 98 are operated. The disk 102 is rigidly mounted on the end of a sleeve 109 which is bolted to the stationary frame of the machine. A tie rod 110 is extended through from end to end of the machine, forming a bearing for the disks 79. The sleeve 109 forms a bearing for the journal boxes 111 on which is fixedly mounted the transmission gear wheel 63.

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

1. A machine for wrapping candy sticks,

comprising a receiving hopper; a rotary extracting mechanism having elongated pockets; a rolling mechanism arranged adjacent said extracting mechanism to receive the candy sticks from the said pockets; an air suction device connected with said extracting mechanism adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets; a magazine for wrapping paper disposed in line with said pockets; an elevating mechanism for said magazine embodying a vertical feed adapted to compensate for the exhaustion of the paper by successive sheets, and further embodying a reciprocating mechanism for retracting, raising and lowering the said feed paper and magazine supporting same.

2. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the delivery end of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of said drum during the passage of the same past the delivery opening of said hopper; means for maintaining the candy sticks at near the inner end of said pockets after the same have passed the delivery opening of said hopper and prior to arriving at the delivery station for said pockets; and an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets.

3. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the delivery end of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of the drum during the passage of the same past the delivery opening of said hopper; a second series of supporting rails disposed parallel to said first mentioned rails and adapted to receive the candy sticks therefrom and to guide the same within said pockets to near the center of said drum, said second mentioned rails being shortened to remove the support from said candy sticks while the said pockets are inverted; and an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets.

4. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the

delivery end of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of said drum during the passage of the same past the delivery opening of said hopper; means for maintaining the candy sticks at near the inner end of said pockets after the same have passed the delivery opening of said hopper and prior to arriving at the delivery station for said pockets; an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets; a rolling mechanism embodying a plurality of directly connected rotary drums disposed in surrounding relation to said candy sticks and paper; and means for rotating said drums.

5. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the delivery opening of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of said drum during the passage of the same past the delivery opening of said hopper; means for maintaining the candy sticks at near the inner end of said pockets after the same have passed the delivery opening of said hopper and prior to arriving at the delivery station for said pockets; an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets; a rolling mechanism embodying a plurality of directly connected rotary drums disposed in surrounding relation to said candy sticks and paper; means for rotating said drums; and means disposed adjacent said rotary drums to engage in holding relation said paper during the rotation of said candy stick and paper.

6. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the delivery opening of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of said drum during the passage of the same past the delivery opening of said hopper; means for maintaining the candy sticks at near the inner end of said pockets after the same have passed the delivery opening of said hopper and prior to arriving at the delivery station for said pockets; an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the

path of said candy sticks when delivered from said pockets; a rolling mechanism embodying a plurality of directly connected rotary drums disposed in surrounding relation to said candy sticks and paper; means for rotating said drums; means disposed adjacent said rotary drums to engage in holding relation said paper during the rotation of said candy stick and paper; and means for releasing the hold of said engaging means on said paper prior to the opening of said drums.

7. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a plurality of supporting rails adjacent the delivery opening of said hopper and below the periphery of said drum to support the candy sticks at approximately the level of the periphery of said drum during the passage of the same past the delivery opening of said hopper; means for maintaining the candy sticks at near the inner end of said pockets after the same have passed the delivery opening of said hopper and prior to arriving at the delivery station for said pockets; an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets; a rolling mechanism embodying a plurality of directly connected rotary drums disposed in surrounding relation to said candy sticks and paper; means for rotating said drums; means disposed adjacent said rotary drums to engage in holding relation said paper during the rotation of said candy stick and paper; means for releasing the hold of said engaging means on said paper prior to the opening of said drums; and means for opening and closing said drums upon said candy stick.

8. A machine for wrapping candy sticks, comprising a receiving hopper; a rotary extracting drum having elongated pockets; a rotary rolling mechanism embodying a plurality of series of rolls adapted to close about said candy stick and paper; an air suction device connected with said drum adjacent said pockets for extracting successively the sheets of wrapping paper to interpose the same in the path of said candy sticks when delivered from said pockets; means for rotating said extracting drum and said rolling mechanism in timed relation; and means for delivering said candy stick from said machine.

9. In a machine for wrapping candy sticks, a rolling mechanism, comprising a plurality of rollers disposed in parallel relation; an endless belt operatively connecting the same and arranged to form a pocket for a candy stick; a wheel mounted on one of said rollers to rotate the same; a drum

having bearings for said rollers; a frame pivoted on said drum forming a bearing for one of said rollers, adapted to swing away from said rollers to form an opening therebetween; a stationary track for said wheel concentric with said drum extended from near the receiving station for said candy stick to the delivery station therefor, and between said stations; a cam member adapted to impinge upon said pivoted frame to move the same to close the roller carried thereby upon the candy stick, said cam member being concentric with said drum and extended over an arc greater than the arc of said track; and a plurality of springs connected with said pivoted frame to move the same to withdraw the roller carried thereby from said candy stick when said frame is not in contact with said cam member.

10. In a machine for wrapping candy sticks, a rolling mechanism, comprising a plurality of rollers disposed in parallel relation; an endless belt operatively connecting the same and arranged to form a pocket for a candy stick; a wheel mounted on one of said rollers to rotate the same; a drum having bearings for said rollers; a frame pivoted on said drum forming a bearing for one of said rollers, adapted to swing away from said rollers to form an opening therebetween; a stationary track for said wheel concentric with said drum extended from near the receiving station for said candy stick to the delivery station therefor, and between said stations; a cam member adapted to impinge upon said pivoted frame to move the same to close the roller carried thereby upon the candy stick, said cam member being concentric with said drum and extended over an arc greater than the arc of said track; a plurality of springs connected with said pivoted frame to move the same to withdraw the roller carried thereby from said candy stick when said frame is not in contact with said cam member; a plurality of gripping jaws pivotally mounted on said drum adjacent the ends of said rollers, adapted to close near the ends of said candy stick; a plurality of cams pivotally mounted between said jaws to close the same when moved thereto by said cams; and rotating means for said cams embodying a stationary member beside said drum and formed concentric therewith, said stationary member having less length than said cam member and said track.

11. In a machine for wrapping candy sticks such as described, the combination of mechanism for rotating said sticks against said wrappers about an axis corresponding to the geometrical axis of the stick; and mechanism for gripping the empty ends of said wrappers when rolled to hold the same against rotation relatively to the said sticks

and body of said wrappers during the partial rotation thereof.

12. In a machine for wrapping candy sticks such as described, the combination of a mechanism to successively deliver candy sticks; a receiving mechanism for said candy sticks having a series of receptacles; a mechanism for delivering wrappers longer than said sticks to said receptacles in advance of said sticks to partially enfold said sticks when delivered in said receptacles; a rotating mechanism mounted in said receptacles to rotate each of said sticks conjointly with each of said wrappers; and a mechanism to twist the ends of said wrappers on said sticks embodying grippers to engage the empty ends of said wrappers after the same have been rolled on said sticks to hold the same while said sticks and the body of said wrappers are rotated.

13. In a machine of the character described, mechanism whereby the candy stick is enfolded within a wrapper of greater length than said stick by rotating the stick against the wrapper about an axis corresponding to the geometrical axis of the stick; means for holding the ends of said wrappers after the same have been placed in cylindrical form and prior to the suspension of the rotation of said stick and wrapper.

14. In a machine of the character described, means for wrapping candy sticks in wrappers of greater length than said sticks by rotating said sticks against the wrappers about axes corresponding to the geometrical axes of the sticks; and means for holding relatively stationary the ends of said wrappers by engaging the same intermediate the initiation and termination of rotation of said sticks and wrappers.

15. In a machine of the character described, a hopper for candy sticks; a wrapping mechanism to operate by rotating said sticks and wrappers therefor about a self-contained center; a transfer mechanism interposed between said hopper and said rotating mechanism to extract the sticks singly from said hopper to deliver the same to said wrapping mechanism, said transfer mechanism embodying relatively deep pocket-like invertible receptacles; means for holding the sticks at the upper end of said receptacles when inverted; and means interposed between said transfer mechanism and said wrapping mechanism for disposing across the delivery opening of each of said receptacles a wrapper for each of said sticks to be seated in said receptacles by the weight of said sticks.

16. In a machine of the character set forth, the combination of means for rolling the article against a sheet of flexible material to wrap the latter about the article with the ends of the sheet extending beyond

the ends of the article, and rotating the wrapped article; and means for engaging with the sheet ends to hold them against rotation relative to the rotation of said wrapped article, for the purpose set forth.

17. In a machine of the character set forth, the combination of a continuously moving conveyer for the articles to be wrapped, means on said conveyer for causing the articles to be spaced from each other and extend thereon transversely of the path of movement of said conveyer, means for wrapping sheets of flexible material about said articles while on said conveyer, with the ends of the sheets extending beyond the ends of the articles, and means for twisting the ends of the sheets while the wrapped article is being advanced by said conveyer, for the purpose set forth.

18. In a machine of the character set forth, the combination of a conveyer for the article to be wrapped and the sheet to be wrapped about it, means on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer and against the sheet, means for wrapping the sheet about the article, with the ends of the sheet extending beyond the ends of the article, means for rotating the wrapped article while on said conveyer, grippers operatively connected with said conveyer and bodily movable therewith, and means for actuating the grippers to engage the ends of the sheet and hold them against rotation relative to the rotation of said wrapped article.

19. In a machine of the character set forth, the combination of a conveyer for the article to be wrapped, means on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer, means for wrapping a sheet of flexible material about the article, with the ends of the sheet projecting beyond the ends of the article, means for rotating the article in wrapped condition, gripper-mechanism for engaging with the ends of the sheet operatively connected with said conveyer, and means for moving said gripper-mechanism into engagement with the sheet-ends for resisting the turning movement of the sheet wrapped about the article, for the purpose set forth.

20. In a machine of the character set forth, the combination of a conveyer for the article to be wrapped, means on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer, means for wrapping a sheet of flexible material about the article, with the ends of the sheet projecting beyond the ends of the article, means for rotating the article in wrapped condition, gripper-mechanism for engaging with the ends of the sheet operatively connected with said con-

veyer and comprising pairs of relatively movable jaws on the conveyer located on opposite sides of the latter, and means for closing the jaws to grip between them the ends of the sheet for resisting turning movement of the sheet wrapped about the article, for the purpose set forth.

21. In a machine of the character set forth, the combination of a continuously moving conveyer for the articles to be wrapped, means on said conveyer for causing said article to extend thereon transversely of the path of movement of said conveyer, means for wrapping a sheet of flexible material about the article while on said conveyer, with the ends of the sheet extending beyond the ends of the article, and means, operating during the movement of said conveyer for twisting the ends of the sheet, for the purpose set forth.

22. In a machine of the character set forth, the combination of a continuously moving conveyer for the articles to be wrapped, means for feeding said articles to said conveyer, means on said conveyer for causing the articles to be spaced from each other and extend thereon transversely of the path of movement of said conveyer, means for wrapping sheets of flexible material about the articles while on said conveyer, with the ends of the sheets extending beyond the ends of the articles, and means, operating during the movement of said conveyer, for twisting the ends of the sheets, for the purpose set forth.

23. In a machine of the character set forth, the combination of a conveyer for the article to be wrapped, means on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer, means for rolling the article against a sheet of flexible material to wrap the latter about the article with the ends of the sheet extending beyond the ends of the article, and rotating the wrapped article while on said conveyer, and means for gripping the ends of said sheet for holding said ends against rotation relative to the rotation of said wrapped article.

24. In a machine of the character set forth, the combination of a conveyer for the articles to be wrapped, means on said conveyer for causing the articles to be spaced from each other and extend thereon transversely of the path of movement of said conveyer, means for rolling the articles against sheets of flexible material to wrap the latter about the articles with the ends of the sheets extending beyond the ends of the articles, and rotating the wrapped articles while on the conveyer, and means engaging with the ends of the sheets to hold said sheet-ends against rotation relative to the rotation of said wrapped articles, for the purpose set forth.

25. In a machine of the character set forth,

forth, the combination of a conveyer for a sheet of flexible material and the article to be wrapped, means on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer and against said sheet, means for rolling the article against the sheet to wrap the latter about the article with the ends of the sheet extending beyond the ends of the article and rotating the article with the sheet wrapped about it, and means for holding the ends of the rolled sheet against rotation, for the purpose set forth.

26. In a machine of the character set forth, the combination of a continuously moving conveyer for a sheet of flexible wrapping material and the article to be wrapped, means on said conveyer for causing the article to extend thereon against the sheet transversely of the path of movement of the conveyer, means for rolling the article against the sheet to wrap the latter about the article, with the ends of the sheet extending beyond the ends of the article, and means movable with said conveyer for operating on the ends of the sheet to secure the latter in wrapped condition about the article.

27. In a machine of the character set forth, the combination of a continuously moving conveyer for the article to be wrapped, means on said conveyer for causing the article to extend thereon transversely of the path of movement of the conveyer means for wrapping the sheet of wrapping material about the article, with the ends of the sheet extending beyond the ends of the article, and gripper-mechanism for twisting the ends of the sheet movable with said conveyer.

28. In a machine of the character set forth, the combination of a continuously movable conveyer for the articles to be wrapped, means on said conveyer for causing the articles to be spaced from each other and extend thereon transversely of the path of movement of said conveyer, means for rolling the articles against sheets of flexible material to wrap the latter about the ar-

ticles, with the ends of the sheets extending beyond the ends of the articles, and means for twisting the ends of the sheets, for the purpose set forth.

29. In a machine of the character set forth, the combination of a conveyer for the article to be wrapped, an article-receiving device on said conveyer for causing the article to extend thereon transversely of the path of movement of said conveyer, means for wrapping a sheet of flexible material about the article, with the ends of the sheet projecting beyond the ends of the article, means for rotating the article in wrapped condition, and gripping mechanisms on said conveyer arranged at opposite sides of the latter for gripping said sheet-ends during rotation of said wrapped article, for the purpose set forth.

30. In an article-wrapping machine, the combination of a continuously moving conveyer for receiving the articles to be wrapped, means for wrapping sheets of wrapping material about the articles with the ends of the sheets extending beyond the ends of the articles while the latter are on the conveyer, and means operating during movement of said conveyer for twisting the ends of the sheets, for the purpose set forth.

31. In a machine of the character set forth, the combination of a conveyer for advancing an article having a sheet of flexible material wrapped about it, with the ends of the sheet extending beyond the ends of the article, means for rotating the article in wrapped condition while being advanced by said conveyer, and gripper-mechanism bodily movable with said conveyer and advanceable therewith for holding the ends of the sheet against rotation relatively to the movement of said wrapped article while the latter is being rotated and advanced.

Signed at New York city, in the county of New York and State of New York, this 3rd day of December A. D. 1910.

ERNEST C. THORSCHMIDT.

Witnesses:

FRANK M. ASHLEY,
RALPH L. SCOTT.