A. J. ROEDEL.

MACHINE FOR WRAPPING CANDY.

APPLICATION FILED MAY 13, 1912.

1,072,505.

Patented Sept. 9, 1913.

3 SHEETS—SHEET 1.

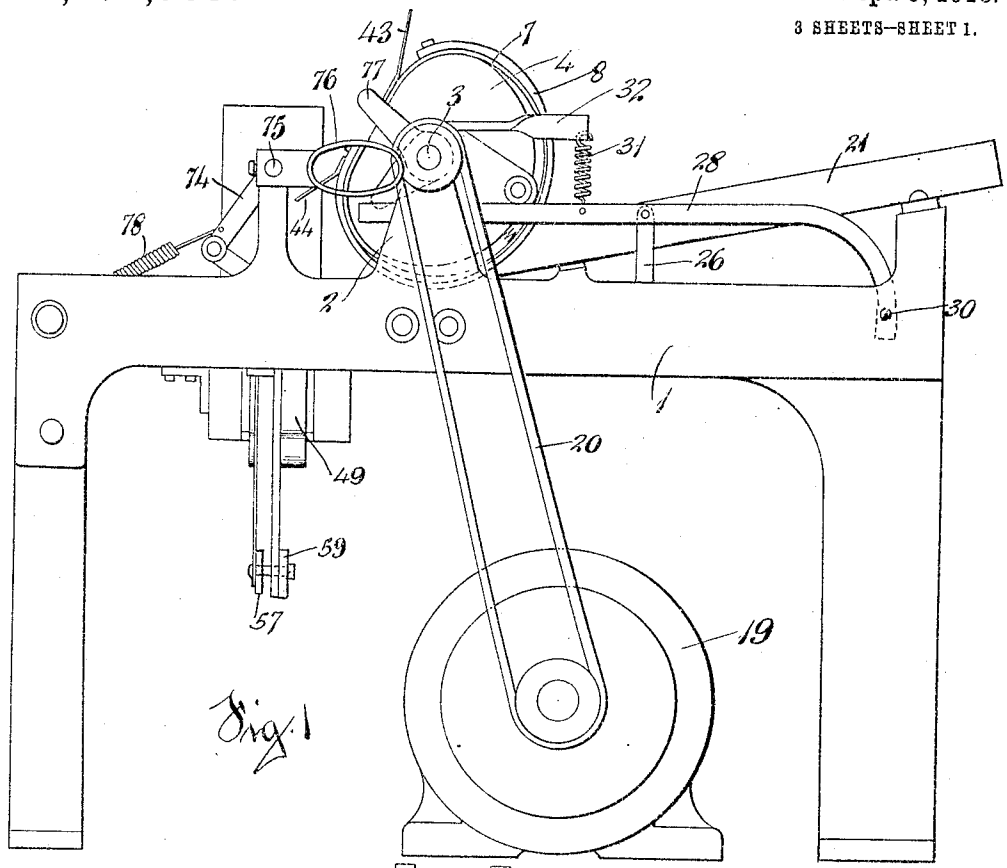


Fig. 1.

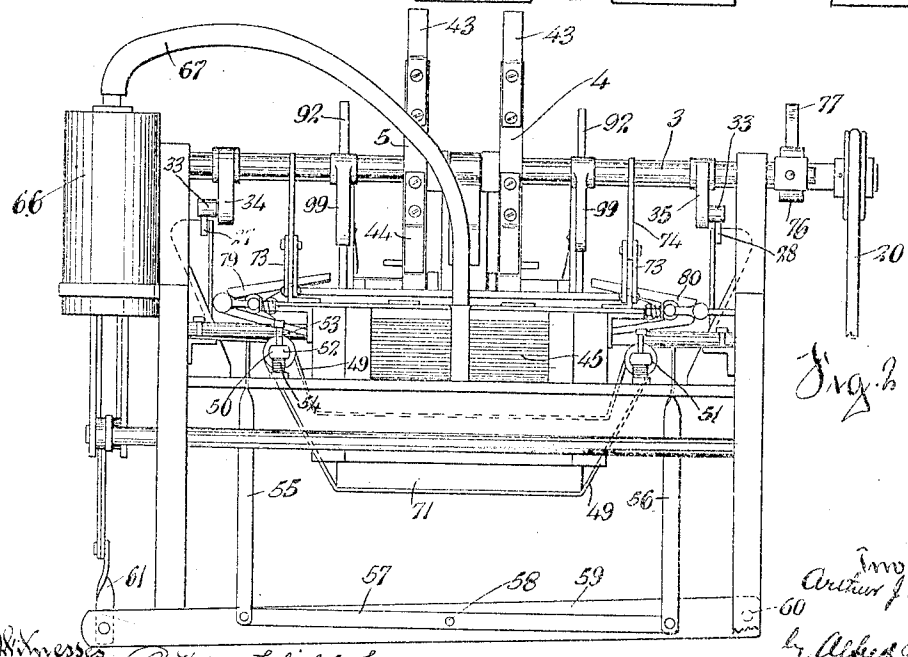


Fig. 2.

Witnesses
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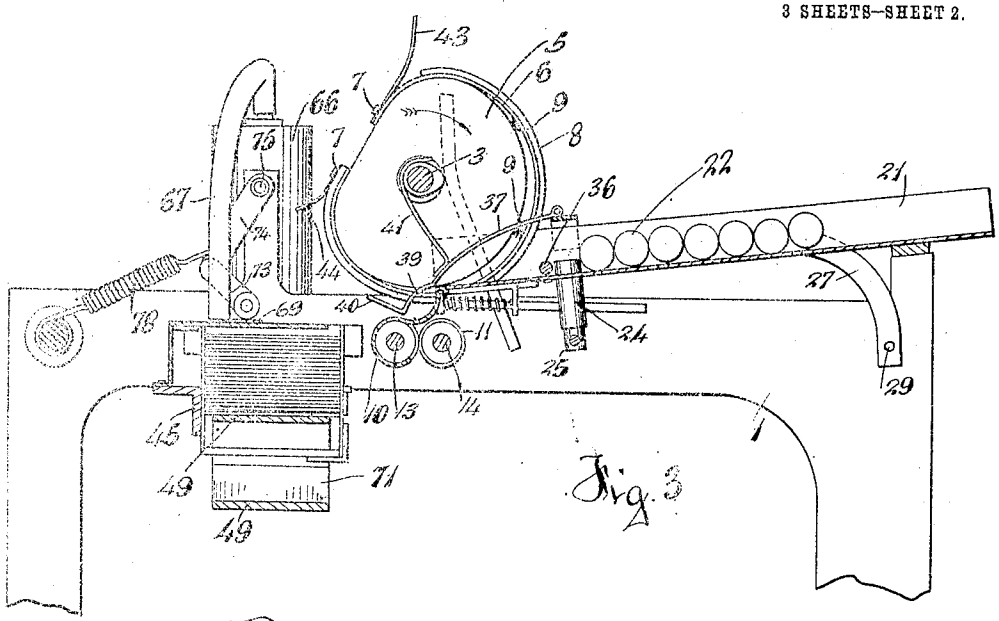


Fig. 3

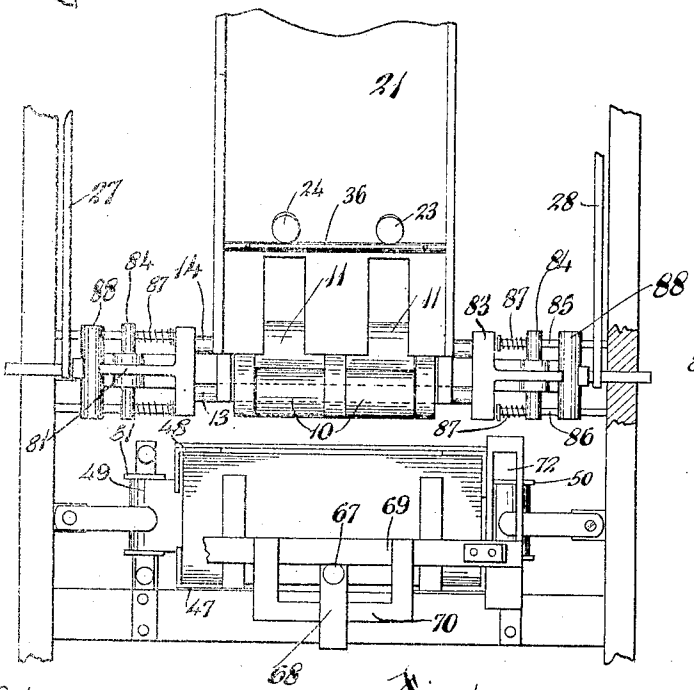


Fig. 4

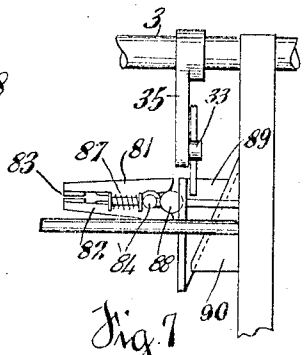


Fig. 7

Witnesses

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MACHINE FOR WRAPPING CANDY.

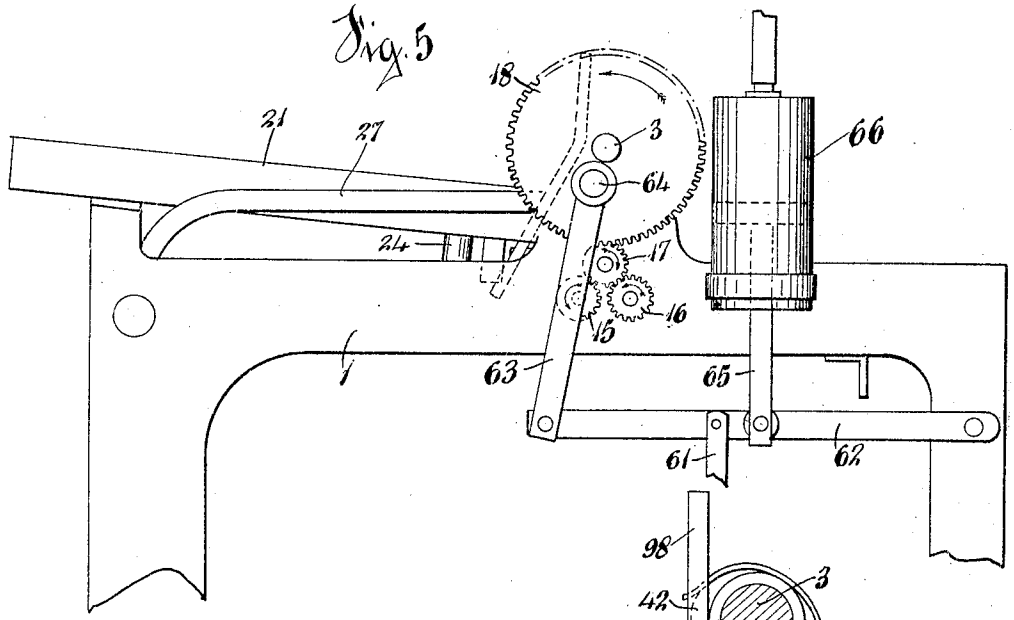
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3 SHEETS—SHEET 3.

Fig. 5



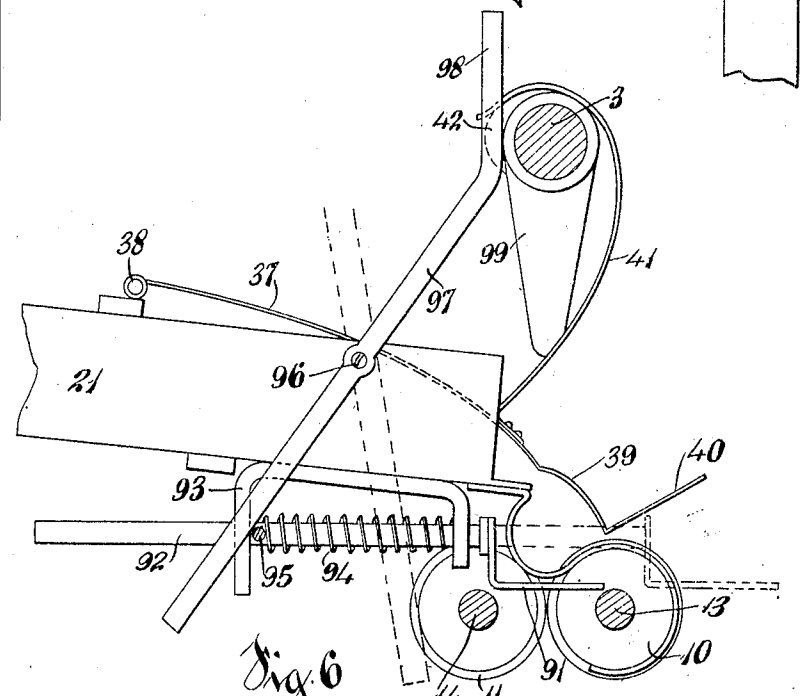


Fig. 6

Witnesses

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UNITED STATES PATENT OFFICE.

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MACHINE FOR WRAPPING CANDY.

1,072,505. Specification of Letters Patent. Patented Sept. 9, 1913.

Application filed May 13, 1912. Serial No. 696,852.

To all whom it may concern:

Be it known that I, ARTHUR J. ROEDEL, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Wrapping Candy, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to machines for automatically feeding wrapping paper to and wrapping candy, and has particular reference to machines for wrapping stick candy, in which the wrapping paper is rolled on the candy and twisted at the ends.

My invention consists of that certain novel construction and arrangement of mechanical parts to be hereinafter particularly pointed out and claimed, whereby the sticks of candy and the wrapping paper in sheets are automatically fed to the machine, one stick and one sheet of paper at a time to be rolled, and the ends twisted and the wrapped sticks delivered from the machine.

In the drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a front elevation of the same. Fig. 3 is a central longitudinal section. Fig. 4 is a top plan view of the front portion of the machine, with the main operating shaft removed. Fig. 5 is a side elevation of the opposite side of the machine to that shown in Fig. 1. Fig. 6 is a detail side elevation illustrating the mechanism for delivering the wrapped candy from the machine. Fig. 7 is a detail side elevation of one of the grippers for twisting the paper and its operating mechanism.

The operating parts are mounted in a suitable substantial framework of side standards 1, 1, with suitable cross braces to form a substantial framework. Mounted in suitable side supports 2, is the main operating shaft 3 of the machine, and upon this shaft midway between the side standards are mounted a pair of cam disks 4, 5. These cam disks are each provided with a resilient peripheral band 6, which is bolted at 7, 7, on the flat portion of the outer edge of each cam, and extends around the cam surface and is preferably covered with leather 8. The resilient bands are supported by springs 9, and as the cams are brought into contact with the candy to be wrapped, as will be hereinafter described, the peripheral bearing surface can give to conform to the diameter of the candy. This arrangement is provided by reason of the considerable variance in diameter of the sticks of candy to be wrapped. These two cams feed the candy when released from the trough, as hereinafter described, to the rollers 10, 11, which are mounted on shafts 13, 14, journaled in the side frames of the machine underneath the main shaft 3 (see Fig. 3). One end of each of these shafts 13, 14, is provided with a pinion 15, 16, and these pinions are engaged by an idler pinion 17, which is driven by the gear 18, secured to the shaft 3 (see Fig. 5). The shaft 3 and the gear 18 are driven in the direction of the arrow shown in Fig. 5, and it will be evident that the roller shafts 13 and 14 and the rollers will both be driven in the same direction, as also will be shown by the arrows in Fig. 5. Any suitable method of driving the main shaft 3 may be provided, and I have indicated in Fig. 1 a motor 19, with belt 20, for driving this shaft.

Mounted to the rear of the rollers 10, 11, in the framework is an inclined trough 21, in which the sticks of candy 22 to be wrapped are laid lengthwise, the trough being of suitable size to hold a considerable number of sticks. The candy is held in the trough by means of two fingers 23, 24, which project upwardly and in normal position extend a short distance above the floor of the trough. These fingers 23, 24, are mounted on a shaft 25, which is carried by arms 26, pivoted to and depending from the bars 27, 28, which are pivotally mounted at 29, 30, in the rear of the framework. These bars are normally held in horizontal position by coiled springs 31, attached to each bar and to a bracket 32 extending out from the framework. Secured on the shaft 3 at either end are the arms 34, 35, carrying rollers 33, 33, which project in line with these bars 27, 28, and as the shaft 3 is rotated, the rollers in proper timed relation with the other parts of the mechanism come in contact with the bars 27, 28, and depress them, thus retracting the fingers 23 from in front of the foremost stick of candy, allowing the stick to move forward in the trough over the fingers and resting against a fixed bar 36 located transverse the floor of the trough. This foremost stick of candy remains in this position until the arms 34 release the

bars 27, 28, when the springs 31 retract the bars and the movement of the fingers pushes the stick of candy over the bar 36 and allows it to roll down the trough against a guard plate 37. This guard plate 37 is pivoted at 38 on a cross bar of the framework, and the plate is provided with a shield portion 39 which extends out over the space between the rollers 10 and 11, and carries an upwardly projecting portion 40, which serves as a guide for the wrapping paper as will be hereinafter described. The guard plate 37 is also provided with an extension 41, which is carried upwardly, embracing the shaft 3, around a cam 42 secured to the shaft 3, which cam is so arranged that at the proper time it will come in contact with the extension 41 and raise the guard plate. Projecting from the cam disks 4, 5, in opposite directions, are a pair of fingers 43, 44, and the cam disks are so mounted on the shaft 3 that the fingers 43 shall have passed the end of the trough before the forward stick of candy reaches this position. The rear set of fingers 44, however, come in contact with the stick and push it off the end of the trough, allowing it to drop down between the rollers 10 and 11. The movement of the rollers causes the stick of candy to rotate when it comes in contact with the upper surface thereof, and these rollers are preferably covered with leather or rubber to prevent injury to the candy.

The moment a stick of candy is delivered to the rollers, a sheet of wrapping paper is also presented to the rollers from the front of the machine. The paper sheets 45, of proper length and width for the wrapper, are mounted in a rectangular receptacle with fixed side and end walls 47, 48, and resting upon the upper portion of an endless belt 49, which is extended across the bottom of the receptacle over rollers 50, 51, mounted to rotate on axle boxes 52, which are mounted on vertical studs 53, projecting upward from a transverse bar of the framework, and these axle boxes for the rollers are sustained by coiled springs 54 (Fig. 2). Resting on top of these rollers are the straps 55, 56, which are coupled to the ends of a horizontal equalizer bar 57, pivoted at 58 to a lever 59, one end of which is pivoted at 60 to the lower portion of the framework, and the other end connected by a strap 61, secured at its upper end to a horizontal bar 62, pivotally mounted in the front of the framework, which bar 62 at its other end is coupled with the pitman 63, coupled to the crank pin 64 on the gear 18. The bar 62 is also coupled to the piston rod 65 of an air pump 66, secured in convenient position at the side of the frame, and 67 represents an air suction tube from this air pump 66, which has its opening through a plate 68 immediately above the package of sheets of wrapping paper. The purpose of this air pump construction is to furnish suction at the proper moment to draw upwardly the foremost sheet from the package of paper to enable it to be grasped by the feed frame 69. This feed frame is provided with a transverse push bar 70, against the edge of which the upper sheet of paper is drawn by the suction of the air pump. At the same time that the suction of the air pump draws upwardly the uppermost sheet of paper, the movement of the bar depresses the free end of the lever 59, so that through the equalizer bar 57 and the straps 55, 56, the rollers 50, 51, carrying the endless belt, are drawn downwardly. A weight 71 is mounted on the under loop of the belt 49, so that as the rollers are drawn down compressing the springs 54, the package of sheets of wrapping paper, except the uppermost sheet, is lowered. During the opposite stroke of the air pump, the pressure on the rollers 50, 51, is removed, the springs 54 raise the rollers and the weight 71 tightens the belt to raise the package of paper. The frame 69 is guided in slots 72 in the framework of the machine, and this feeding frame is coupled by links 73 with the arms 74 secured to the horizontal shaft 75 journaled on standards in the framework, and this shaft 75 carries a cam 76, which is projected into the pathway of an arm 77 on the shaft 3, the parts being so arranged that the cam will be actuated by the arm to rock the shaft 75 in proper timed relation to the other movements of the machine. The rocking of the shaft 75 causes the arms 74 to slide the frame 69 forward, thus feeding forward the uppermost sheet of paper. Springs 78 return the feeding frame to its normal position when the cam 76 is released from the arm 77. The front edge of the paper sheet is, by the movement of the feeding frame, brought against the guiding surface 40 and over the roller 10, at the same time that the stick of candy reaches the position between the rollers, and the movement of the rollers causes the paper to wrap around the candy.

Opposite the ends of the stick candy, between the rolls, are a pair of grippers 79, 80. Each of these grippers comprises two members (Fig. 7) 81, 82, with a wide gripping bar 83. These gripping members are pivoted on a transverse spindle 84, which is mounted at either end on parallel rods 85, 86, so that the spindle can slide on the rods 85, 86, and thus carry the grippers forward toward the rollers 10, 11. Coiled springs 87, 87, hold the grippers normally away from the ends of the rollers. In order to actuate the grippers, I provide the transverse bar 88, which is also mounted to slide on the rods 85, 86, and this bar is pushed forward by the vertical edge of a movable wedge 89, which is actuated vertically, and

has its bearing and is guided by the flanges on a fixed wedge plate 90. The movable wedge plates 89 are pivoted near the outer ends of the bars 27, 28, the connection being made with a slot in the upper face of the wedge plate. The result of this is that as the bars 27, 28, are depressed as heretofore described, the wedge plates will be depressed to bring the surface of the bar 88 between the outer ends of the gripping members, thus closing the grippers, and when the grippers are closed, the further downward movement of the wedge plates will carry the grippers inwardly toward the ends of the rollers. The object of this, as will be hereinafter described, is that the grippers, after they have grasped the wrapping paper as it is wrapped around the candy, may hold the paper while the wrapper is twisted, and inasmuch as the twisting of the paper shortens the length of the wrapper, the grippers are advanced toward the rollers during the twisting operation in order to prevent the paper from tearing.

When the candy has been wrapped, the package is pushed from the position between the rollers 10 and 11 by the pusher shown in Fig. 6, which comprises a pair of angle plates 91, mounted on rods 92, held to slide back and forth in brackets 93, mounted underneath the delivery trough on each side. Coiled springs 94 are mounted on the rods 92 between one arm of the brackets and a rod 95 which connects the two rods 92. Pivoted at 96 on each side of the delivery trough are two levers 97, 97, the lower ends of which bear against the rod 95, and the other ends 98 extend upwardly in the pathway of arms 99, 99, secured to the shaft 3, so that at the proper time the arms coming in contact with the levers 97 shift the angle plates 91 into the position shown by dotted lines in Fig. 6, to deliver the wrapped package from the machine.

The operation of the various mechanisms in their timed relation to each other is as follows: Sticks of candy 22 are laid in the trough, the foremost stick resting against the fingers 23, with the parts in the position shown in Figs. 1 and 3. Let us assume that one stick of candy has been wrapped and delivered, and the next succeeding stick has been delivered by the fingers 23 in front of the bar 36. With the machine now set in operation, this unwrapped stick is carried by the cam disks to the front edge of the trough, the guard plate 37 is raised by its cam and the stick delivered on top of the rollers 10 and 11. At the same time that the unwrapped stick is being delivered to the rollers, the air pump is operated through the gear 18 and connecting mechanism, and the uppermost sheet of wrapping paper has been drawn up in front of the feeding frame 69, while the descent of the lever 59 has carried the balance of the sheets away from the uppermost sheet. The arm 77 has come in contact with the cam 76, the shaft 75 is being rocked to advance the feeding frame and deliver the sheet of wrapped paper under the guard 40, on top of the roller 10, where it comes in contact with the candy and wraps around the stick. By the time a single turn of the wrapper on the candy has been made, the grippers have been closed by the pushing down of the wedge plates 89, 90, and these grippers grasp the paper, holding it from turning at the ends, while the rollers continue to rotate the stick and the wrapper, thus twisting the paper at the ends. During this twisting movement, the grippers are advanced by the further movement of the wedge plates 89, 90, so as to prevent tearing of the paper. As soon as the arms 27, 28, are released by the crank arms 34, 35, the springs 31 retract the arms and with them the wedge plates 89, 90, and a small spring located between the outer ends of the grippers (not shown) opens the grippers, releasing the wrapped stick, and the delivery plates 91 are operated, assisted by the fingers 43 on the cam disks 4, 5, to deliver the wrapped candy from the machine, whence it drops down into a suitable receptacle, or into a conveyer (not shown).

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

1. In a machine of the character specified, a pair of rollers in close proximity to each other, with means for rotating the same in the same direction, means for delivering separate pieces of material one at a time to said rollers, and means for feeding a sheet of wrapping paper to be engaged by the rotating material, and means for holding the paper at the ends from rotating during the rotation of the material, while permitting the retraction of the paper.

2. In a machine of the character specified, a pair of rollers in close proximity to each other, with means for rotating the same in the same direction, means for delivering separate pieces of material one at a time to said rollers, and means for feeding a sheet of wrapping paper to be engaged by the rotating material, grippers to grasp and hold the paper at the ends, and means for advancing the grippers toward the material to be wrapped during the rotation thereof.

3. In a device of the character specified, a feeding trough for holding the sticks of candy, a power-driven shaft carrying cam disks and fingers for advancing the material, movable stops to hold the material in the trough and to allow one stick to be advanced at a time, a pair of rollers to which the sticks are fed, with gearing coupling same to the main shaft to rotate the rollers

in the same direction, means for supporting a package of sheets of wrapping paper, with means for feeding one sheet at a time to the rollers, with connecting mechanism intermediate the paper feeding devices and the main shaft, for actuating the parts in timed relation with each other.

4. In a device of the character specified, a feeding trough for holding the sticks of candy, a power-driven shaft carrying cam disks and fingers for advancing the material, movable stops to hold the material in the trough and to allow one stick to be advanced at a time, a pair of rollers to which the sticks are fed, with gearing coupling same to the main shaft to rotate the rollers in the same direction, means for supporting a package of sheets of wrapping paper, with means for feeding one sheet at a time to the rollers, a pair of grippers at each end of the rollers adapted to be shifted laterally, and connecting mechanism intermediate the paper feeding devices, each pair of grippers and the main frame whereby the parts may be actuated in timed relation with each other.

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