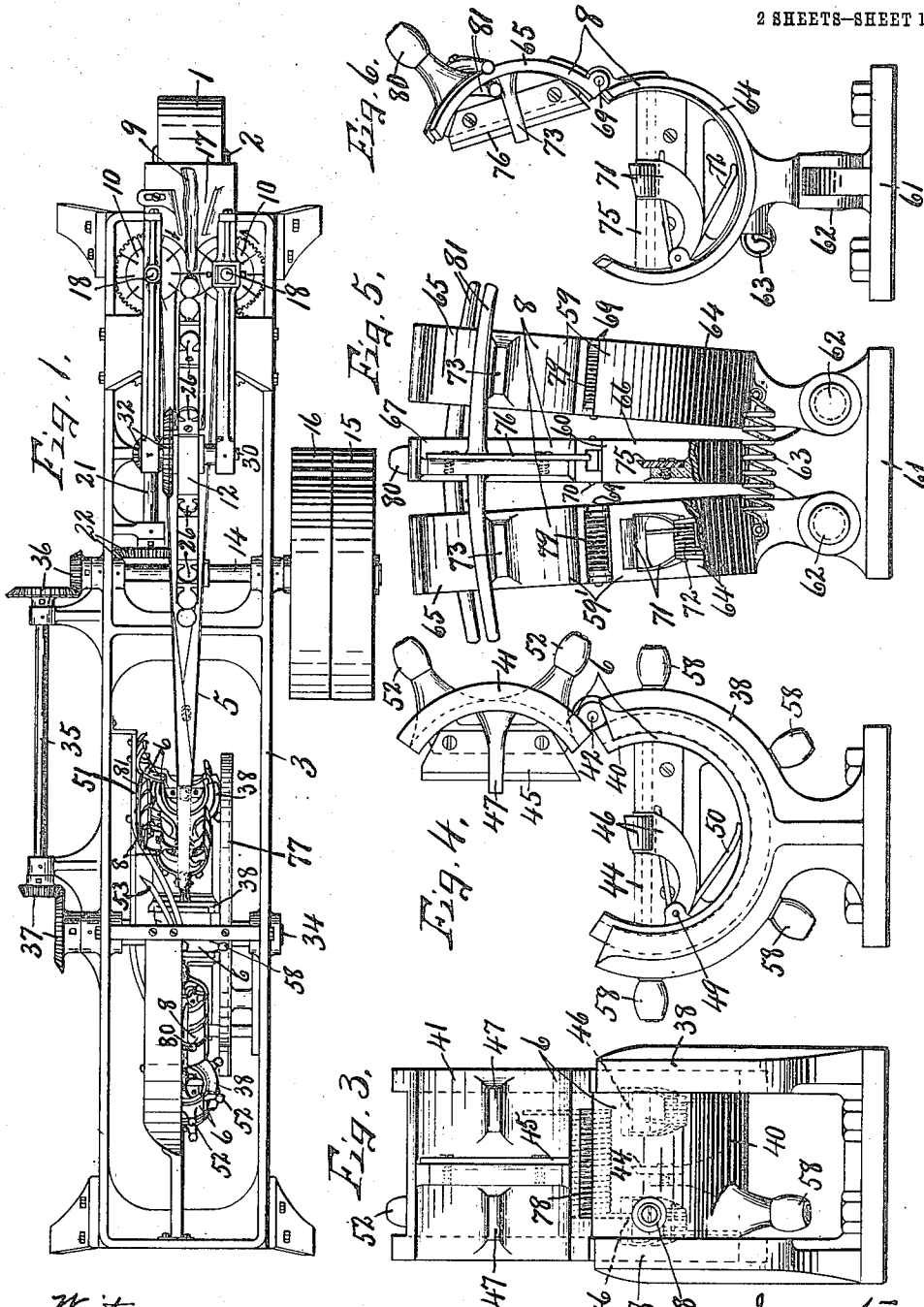


H. R. EVANS.
WRAPPING MACHINE.
APPLICATION FILED NOV. 1, 1907.

1,059,664.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.



Witnesses
W. E. Chase
T. C. Thomas

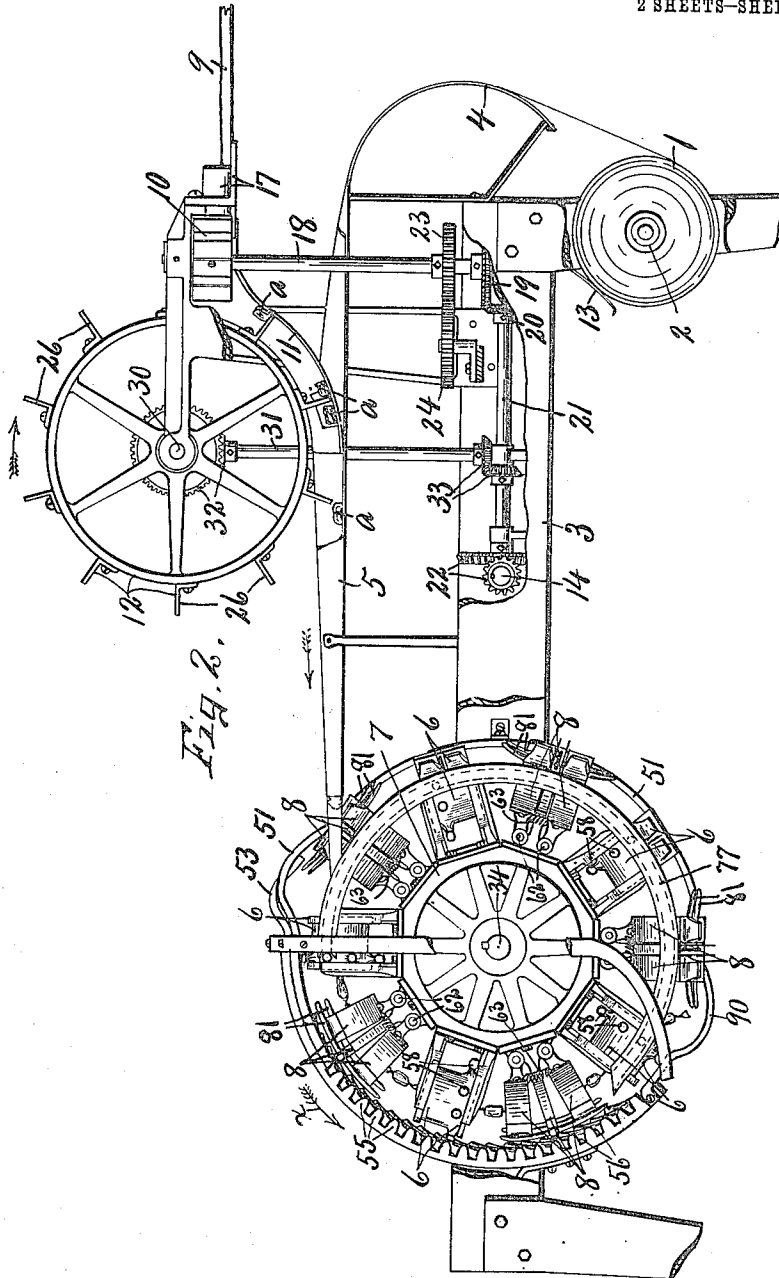
Inventor
H. R. Evans.
By
Howard P. Driscoll
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UNITED STATES PATENT OFFICE.

HENRY R. EVANS, OF SYRACUSE, NEW YORK, ASSIGNOR TO EVANS-McDOWELL
MACHINERY COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW
YORK.

WRAPPING-MACHINE.

1,059,664.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed November 1, 1907. Serial No. 400,176.

To all whom it may concern:

Be it known that I, HENRY R. EVANS, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Wrapping-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in wrapping machines, and although it is especially adapted for putting up small confections, such as chocolates, caramels and other candies, the various mechanism involved therein are equally useful in inclosing larger articles, such as oranges, lemons, and similar fruits in paper cachets adapted to be twisted at the ends around the inclosed article. These confections are manufactured in strips of considerable length, and one of the essential objects of my present invention is to cut or divide these strips into comparatively small sections of uniform size and to inclose them individually in separate packages or paper wrappers, and to automatically twist such wrappers at the ends to conceal and retain the inclosed article therein. In addition to this I have sought to render the several operations continuous or without interruption by causing all of the active cutting, spacing and twisting elements to move continuously in the same direction in synchronism with each other and at the same time to impart to the twisting devices successively a separate rotary motion whereby the ends of each wrapper are twisted closely to the inclosed confection.

One of the specific objects is to provide a continuously rotating carrier with means for gripping and drawing the strip of paper through the former and simultaneously severing each paper cachet therefrom, and at the same time twisting the ends of the paper package in opposite directions and discharging the completed packet without interruption in the continuity of rotation of the carrier.

Other objects and uses relating to the specific parts of the machine will be brought out in the following description.

In the drawings—Figure 1 is a top plan of a wrapping machine embodying the various features of my invention. Fig. 2 is a side elevation, partly broken away, of the machine shown in Fig. 1. Figs. 3 and 4 are

respectively enlarged side elevations and a face view of one of the detached grippers, cutters and twisters. Figs. 5 and 6 are respectively a side elevation partly broken away, and a face view of one of the detached companion cutting and gripping heads, associated with a combined gripper, cutter and twister shown in Figs. 3 and 4.

In carrying out the objects stated, a roll —1— of paper of suitable width for forming the packets is mounted upon a reel —2— at one end of a suitable supporting frame —3—, one end of the paper being first drawn by hand upwardly around and over a convex guide —4— and through a suitable former —5— where it is brought into engagement with one of a series of gripping and twisting devices —6— which are secured to the periphery of a continuously rotating drum or reel —7—, the latter being journaled upon the supporting frame —3—, said drum being also provided with a series of gripping and holding devices —8— alternating with the gripping and twisting devices —6— so that when the paper is once connected with one of the gripping devices, the rotation of the drum causes said gripping device to automatically and continuously draw the paper through the former, each gripping device —6— and —8— being provided with suitable cutters for dividing the paper strip containing the confections into sections of suitable length so that their ends may be readily twisted to retain the inclosed confection therein. These confections are usually made in a continuous strip —9— which is fed forwardly between and is divided into sections by a pair of rotary cutters —10—, said confections falling upon an inclined guide —11— along which they gravitate and are positively fed and spaced a uniform distance apart by a rotary feeding and spacing device —12—. The rotation of the reel —2— during the unwinding of the paper roll —1— is frictionally retarded by a suitable brake —13— which serves to keep the paper sufficiently tight while being drawn through the former to prevent its kinking or buckling.

The reel —2— is journaled in one end of the frame —3— some distance below the corresponding end of the former —5— and the guide —4— is also mounted upon the same end of the frame and is usually flat transversely, its upper end being merged with the

rear flat end of the bottom of the former —5—.

The drum or reel —7— carrying the gripping, cutting and twisting devices for the paper is mounted on the front end of the frame —3— in such position that when the gripping and twisting devices —6— and —8— are brought into a position directly over the axis of revolution of the drum, their centers are in substantial alinement with the front end of the former which latter is disposed in a substantially horizontal plane and is mounted upon the frame —3— between the drum —7— and reel —2—.

The rotary cutters —10— and the feeding and spacing device —12— are also mounted upon the frame and are driven by suitable power transmitting mechanisms from a main driving shaft —14— which in this instance is provided with tight and loose pulleys —15— and —16— adapted to be connected to any available source of power not shown. The drum —7— is also driven by a suitable power transmitting mechanism from the main driving shaft —14— and is, therefore, synchronized with the action of the rotary cutters —10— and feeding and spacing device —12—.

The sides of the former —5— are gradually overturned upwardly toward each other and tapered toward the drum —7— for the purpose of folding the sides of the paper upwardly around the sides of the several candy sections —a— as they approach the gripping and twisting devices during the rotation of the drum. The strip —9— of candy is in this instance fed horizontally through a suitable guide —17— between the rotary cutters —10— which are secured to the upper ends of a pair of upright parallel shafts —18—, one of which is provided at its lower end with a bevel gear —19— meshing with a pinion —20— on a horizontal shaft —21— which in turn is driven from the shaft —14— by intermeshing bevel gears —22— as best seen in Figs. 1 and 2.

The rotary cutters —10— are disposed in the plane of travel of the candy strip —9— and each provided with a series of in this instance ten cutting blades having their cutting edges disposed vertically and adapted to shear with each other at the meeting faces of the cutters, the cutting edges of said blade being spaced circumferentially a uniform distance apart corresponding to the length of the confection sections into which it may be desired to cut the strip —9— thereby cutting the strip into small confections of uniform length.

The cutters —10— are preferably of uniform diameter and in order that corresponding blades may shear with each other, they must be rotated at the same rate of speed and for this purpose the shafts —18— are provided with gears —23— of the same

pitch diameter and motion is transmitted from one to the other through the medium of idlers —24— which are also journaled on the frame, whereby the meeting faces of the cutters are caused to travel in the same direction or toward the feeding and spacing device —12—.

The guide —17— and cutters —10— are located some distance above the horizontal plane of the former —5— and directly beneath the meeting face of the cutters is located the downwardly and forwardly inclined guide —11— along which the confections gravitate, the front end of the guide —11— terminating a short distance below the lower side of the feeding and spacing device —12— and in close proximity but slightly above the bottom of the former —5— leaving a sufficient intervening space to permit the paper to be readily drawn between the lower end of the guide —11— and bottom of the former at which point the candy sections or confections are deposited one by one upon the paper. This feeding and spacing device —12— is for the purpose of feeding and spacing the confections a uniform distance apart upon the paper as it is drawn through the former and preferably consists of a rotary drum or annulus having upon its periphery a series of in this instance ten shoulders or followers —26— corresponding to the number of blades in each of the cutters —10— and spaced a uniform distance apart corresponding to the distance between the centers of the gripping devices —6— and —8—, said followers traveling in close proximity to the front sides of the cutters and along the concentric portion of the guide —11—, the feeding and spacing device —12— being timed so that each follower —26— passes the adjacent side of the cutter just prior to the severing of one of the confection sections so that the latter gravitate successively along the inclined guide —11— against the preceding follower which permit the confections to gravitate slowly until they are advanced nearly to the end of the guide where the preceding confection stops by friction and is positively discharged from the guide by the next succeeding follower thereby depositing the confections upon the paper a uniform distance apart. The portion of the bottom of the former upon which the confections are thus deposited is slightly concave and the sides of this and remaining forward portion of the former gradually taper toward the gripping device and are turned upwardly and inwardly toward each other thereby bending the longitudinal edges of the paper upwardly and inwardly over and upon the confections thus forming a paper tube containing a series of confections spaced a uniform distance apart.

The gripping devices —6— and —8— are

spaced a distance apart corresponding to the distance between the confections in the paper tube as the latter is drawn through the former, the gripping device —6— being rotatable transversely of its orbit of movement around the axis of the drum —7— and is provided with suitable cutters for severing the inclosed portion of the paper tube thereby serving the treble purpose of gripping, twisting and cutting the paper tube while the other gripper —8— serves the treble purpose of a gripper, holder and cutter for another adjacent portion of the tube. In other words, the gripping devices —6— and —8— are spaced apart a sufficient distance to receive between them the portion of the paper tube in which the confection is lodged and, therefore, said gripping devices grip the portions of the paper tube at each side of said confection, the gripping device —8— serving to hold the adjacent portion of the tube from rotation and at the same time continues to draw the paper through the former while the preceding gripping device —6— is rotated in a manner hereinafter described to twist the portions of the paper tube at opposite ends of the inclosed confection, these several operations being effected during the continued rotation of the drum —7—.

Referring again to the feeding and spacing device —12—, it will be seen upon reference to Figs. 1 and 2 that it is mounted upon a horizontal shaft —30— which is driven by an upright shaft —31— through the medium of intermeshing gears —32—, said upright shaft deriving motion from the shaft —21— by similar intermeshing gears —33— so that the feeding and spacing device is synchronized with the action of the rotary gripping and cutting device. The drum —7— is also mounted upon a horizontal shaft —34— which is driven from the main driving shaft —14— through the medium of an auxiliary shaft —35— and intermeshing gears —36— and —37—.

Each gripping and twisting device —6— preferably consists of a hollow cylinder journaled at its ends in suitable bearings —38— and divided into unequal segments —40— and —41—, the segment —40— being greater than a semi-circle while the segment —41— is less than a semi-circle and is hinged at —42— to one of the meeting edges of the segment —40— and its free edge is adapted to close upon the opposite meeting edge of the segment to form a complete circular drum. The bearings —38— also consist of a segment of a circle greater than a semi-circle and less than length of segment —40— open at the top to receive and retain the cylinder sections —40— and —41— in operative position against radial displacement and at the same time permitting said sections when closed one upon the

other to rotate freely about the axis of the cylinder independently of the orbital movement about the axis of the drum —7—, the axes of the cylinder being at substantially right angles to that of the drum and the cylinders are left open at the ends to receive the paper tube.

Each cylinder carries centrally a pair of shearing blades —44— and —45— and also opposite pairs of gripping jaws —46— and —47—, those of each pair being located at opposite sides of the central shearing blades —44— and —45— as best shown by dotted lines in Fig. 3 and by full lines in Fig. 4.

The shearing blade —44— is rigidly secured in the larger cylindrical segment —40— with its shearing edge nearly diametrical while the other shearing blade —45— coacting therewith is rigidly secured to the inner side of the smaller cylinder section —41— and coöperates with the shearing blade —44— to cut the paper tube transversely when the cylinder segments are being closed down one upon the other in a manner hereinafter described.

Associated with each of the shearing blades —44— but at opposite sides thereof is a pair of the gripping jaws —46— which are pivoted at —49— to the inner face of the cylinder segment —40— some distance below the shearing edge of the blade —44—, said gripping jaws —46— being spring pressed toward the segment —41— by suitable springs —50—. In like manner the shearing blade —45— has associated therewith a pair of oppositely disposed gripping jaws —47— which are rigidly secured to the inner face of the segment —41— and when this latter segment is closed upon the segment —40—, the jaws —46— and —47— are caused to impinge against opposite faces of the paper tube at one end of the confection which is inclosed therein, either coacting pair of jaws gripping the paper with sufficient force (dependent upon the tension of the spring —50—) to firmly hold the paper tube and draw it through the former as the drum —7— is rotated or until the paper tube is further caught and held by the gripping device —8—.

The meeting faces of the gripping jaws —46— and —47—, when the segments —41— are closed upon the segments —40—, are close to the axis of the cylinder and thus grip and flatten the adjacent portion of the tube.

As the drum —7— is rotated in the direction indicated by arrow —X—, Fig. 2, the upwardly moving segments —41— are open and the open sides of the lower segment —40— are alined with and face the overlying portion of the paper tube so as to permit said lower segment —40— to embrace the adjacent portion of the paper tube as it travels upwardly toward a posi-

tion nearly over the axis of the drum —7—, the segment —41— being opened and held open during the upward movement of the gripping device by a suitable track —51— and suitable roller projections —52— on the periphery of the segment —41—, and as soon as the adjacent portion of the paper tube is embraced by the lower segment —40— the upper segment —41— is closed by a second cam or track —53— acting against the projections —52—, the cams —51— and —53— being so arranged as to cause the segment —41— to close upon the inclosed portion of the paper tube at about the same time that the cylinder reaches the point directly over the axis of the drum —7— when it is in direct alinement with the former.

As soon as the segments —40— and —41— are closed upon the paper tube at which time the coating gripping jaws —46— and —47— are also in action and the shearing blades —44— and —45— have severed the inclosed portion of the paper tube transversely, the cylinder consisting of the segments —40— and —41— together with the grippers and cutters therein are rotated about the axis of the cylinder, such rotation being effected through the medium of a series of spiral teeth —55— and intervening grooves —56— into which the roller projections —52— together with another series of roller projections —58— projecting from the periphery of the segment —40— enter successively. That is, the projections —52— and —58— are spaced a uniform distance apart and the spiral grooves —56— and teeth —55— are arranged at such a pitch that as the first projection —52— leaving the track —53— rides in the first groove —56—, the next succeeding projection —52— will be caused to ride in the next groove and in this manner the successive projections enter successive grooves and cause the cylinder to make one or more, in this instance four, complete revolutions during substantially one-third of the revolution of the drum —7—.

The gripping and holding devices —8— which alternate with the gripping and twisting devices —6—, each preferably consists of a pair of hollow cylinders or rings —59— and —59'— and a similar but somewhat narrower interposed ring —60—, the latter being rigidly secured to the periphery of the drum —7— while the rings —59— and —59'— are pivoted at their lower sides at —62— to the head —61— and are automatically drawn toward opposite sides of the ring —60— by a retracting spring —63— as best seen in Fig. 5.

It will be seen upon reference to Fig. 2 that at least two of the twisting devices —6— at opposite sides of the intervening gripping device —8— will be in action at

the same time and that such twisting action of the ends of the wrappers containing the confections will necessarily tend to shorten the length of said wrapper and in order that this may be successfully accomplished without liability of tearing or breaking the wrapper at the twist, the opposite rings —59— and —59'—, in each of which is mounted a pair of grippers for holding the ends of the wrapper while said rings —59— and —59'— are made to yield against the action of the spring —63— to compensate for the shortening of the wrappers during the twisting operation, said rings —59— and —59'— being returned to their normal position toward the sides of the center ring —60— as soon as the segments —65— are opened to allow the discharge of the completed packet or cachet.

Each of the rings —59— and —59'— is divided above its horizontal diameter forming segments —64— and —65— of unequal length, the segments —64— being greater than a semicircle while the segments —65— is less and are both quite similar to the segments —40— and —41— respectively of the twisting and gripping device previously described. In like manner the rigid center ring —60— is composed of segments —66— and —67— of substantially the same circumferential dimensions respectively as the segments —64— and —65— the latter segments being hinged at —69— to each other while the segments —66— and —67— are similarly hinged at —70—, the swinging axes of the smaller segments —65— and —67— being substantially coaxial.

Each segment —64— is provided with a pair of gripping jaws —71— which are spring pressed upwardly by a suitable spring —72— and their gripping faces are located approximately in the diametrical plane of the segment —64— while the upper segments —65— of each ring are provided with rigid gripping jaws —73— projecting inwardly and radially therefrom and having their inner faces adapted to contact with the gripping jaws —71—, one pair of the coating gripping jaws nearest the preceding gripping and twisting device serving to grip and hold one end of the wrapper containing one of the confections while being twisted by the twisting device while the other pair nearest the former serve to grip and to draw the paper tube through said former, it being understood that the last named gripping jaws are brought into action before the wrapper sections are severed from the main body.

The intermediate ring sections —66— and —67— are provided respectively with shearing blades —75— and —76—, the latter closing down upon the shearing blade —75— just after the succeeding gripping jaws —71— and —73— engage the adja-

cent portion of the paper tube so that the latter jaws obtain a firm grip upon the adjacent end of the paper tube before the latter is severed from the tube by the preceding shearing blades —75— and —76—.

In order that the segments —66— and —67— may be opened and closed simultaneously with and at the same time permitting the rings —59— and —59'— to rock axially upon their pivots —62—, I provide the segments —67— with a pair of parallel arms —81— extending in opposite directions therefrom and embracing the adjacent portions of the segments —65—, said parallel bars constituting guides for the segments —65— and at the same time locking them to the segments —67— against independent movement about their swinging axes —69— relative to the segment —67—.

As soon as the twisting segments —40— and —41— cease to rotate after leaving the spiral toothed rack —55— during the revolution of the drum —7— at which time the segment —40— is brought to its normal position with its open side facing outwardly the segment —41— begins to open by reason of the engagement of the shoulder —52— nearest its free end with the track —90— and in order to prevent turning of the segment —40— in its bearing —48— during this opening of the segment —41—, one of the shoulders or rollers —58— nearest the open side of the segment —40— is caused to engage in the concentric groove of a curved track —77— which extends from the end of the toothed rack —55— around the opposite side of the drum and upwardly to nearly the top side of said drum so as to positively hold the segment —40— against turning in its bearing while the segment —41— is held open by the track —51— to permit the entrance of the tube into the open side of the segment —40— whereupon the segment —41— is closed by the track —53— and the operation previously described repeated, the closing of the segments —41— being aided by suitable coil springs —78— as best seen in Fig. 3. In like manner the segments —65— of the gripping devices —8— are closed by suitable springs —79— as best seen in Fig. 5 and through the medium of the guide arms —81— these springs operate also to close the segments —67— of the center ring —60—.

In operation, the candy strip —9— is fed by hand to the rotary cutters —10— which feed and cut said strip into small confections, the latter dropping upon the inclined guide —11— and are fed and spaced apart a uniform distance upon the moving paper strip which latter has been previously drawn through the former and engaged with one of the gripping devices. The machine now being in motion and assuming that the advance end of the paper tube has been previously

drawn into position to be engaged by the gripping and twisting device —6— when the segment —41— is closed by the engagement of the advance roller —52— of the segment —41— with the track or cam —53— which operation takes place as each gripping and twisting device —6— assumes a position nearly directly over the axis of the shaft —34—, care being taken when first attaching the paper tube to the gripping device to locate the portion of the tube containing the confection substantially midway between the adjacent gripping devices —6— and —8—. Now as the paper tube is drawn forwardly by the rear jaws —46— and —47— of the gripping device —6— just described, the succeeding gripping device —8— will be advanced in an open position to receive the overlying portion of the paper tube until a shoulder —80— on the movable segment —65— is brought into engagement with the cam track —53— whereupon the segment —65— is closed down upon the segment —64— and the opposite pairs of jaws —71— and —73— will grip the paper tube at opposite sides of the interposed shearing blades —75— and —76—, the latter serving to sever the paper tube between the opposite pairs of gripping jaws. As soon as the segment —65— is closed down upon the segment —64— to hold the paper and draw it through the former the rotary cylinder comprising the segments —40— and —41— of the gripping and twisting device —6— begins to rotate around its own axis by reason of the successive engagement of the shoulders —52— and —58— with the spiral shoulders —55— which are arranged concentrically around the axis of the drum —7— and are continued sufficiently to produce one or more in this instance four complete revolutions of the twisting cylinder when the latter returns to its normal position shown in Fig. 4 and the segment —41— is opened by a cam track —90— and is held in its open position by the track —51— which forms a continuation of the track —90—, the gripping and twisting device —6— being now in a position to repeat the operation just described. In like manner when the following gripping device —8— which is closed during substantially one-third of the revolution of the drum —7—, is opened when its shoulder —80— comes in contact with the track —90— thereby permitting the completed or twisted wrapper containing the confection to be discharged at the low side of the drum, the segment —65— of the gripping device is held open for a repetition of the operation previously described, it being understood that each coacting pair of gripping devices —6— and —8— performs the same operation in the same manner.

The followers —26— travel between the

front sides of the cutters —10— and their movement is timed so as to engage and force the severed confections from the cutters as soon as they are severed thereby acting as plungers to positively feed the confections from said cutters along the inclined guide —11—.

What I claim is:

1. In a wrapping machine, a former, means for drawing a continuous sheet of paper through the former and comprising a continuously moving gripping device having an independent rotary movement for twisting the paper, coacting means for effecting such independent rotary movement, and additional means moving with the gripping device for cutting the paper transversely.

2. In a wrapping machine, means for feeding a continuous strip of paper, mechanism for depositing articles to be wrapped upon said paper uniform distances apart, means for folding the edges of the paper over and upon said articles, said feeding means comprising continuously moving gripping devices rotatable transversely of such continuous movement for twisting the paper containing said articles, means moving with the gripping devices for severing the paper transversely at regular intervals, and means coacting with the feeding means for rotating the gripping devices as they are successively brought to a predetermined position.

3. In a wrapping machine, a continuously rotating drum and actuating means therefor, said drum being provided with a series of transversely rotatable gripping and twisting devices, and means coacting with the drum for rotating said devices transversely.

4. In a wrapping machine, a rotary drum and actuating means therefor, a series of gripping devices rotatably mounted upon the drum and composed of segments, one of which is movable relatively to the other for receiving the paper between the segments, and additional means for closing said segments one upon the other and for rotating them relatively to the drum for twisting a portion of the paper therein.

5. In a wrapping machine, a continuously rotating drum and actuating means therefor, in combination with a plurality of rotary twisters mounted upon the drum and each provided with a movable section, means moving with the drum for feeding the paper within the sections as they are successively brought to a predetermined point during the rotation of the drum, means for opening the movable section just prior to presentation at such point, additional means for closing said section upon the paper, and further means for rotating the twisters after each section is closed upon the paper and during the rotation of the drum.

6. In a wrapping machine, a continuously rotating drum and actuating means therefor, a series of gripping devices secured to the drum and each provided with a movable section, means for successively opening the movable sections as they are presented at a given point in their travel with the drum, additional means for closing said sections immediately after passing such point, a series of rotary twisters alternating with the gripping devices and also mounted upon the drum, and means for rotating said twisters during the rotation of the drum.

7. In a wrapping machine, a continuously rotating drum, a series of gripping devices mounted on the drum and each provided with movable sections for permitting the entrance of the paper thereto, means for closing said section upon the paper as the drum is rotated and a twisting device mounted upon the drum between the gripping devices for engaging and twisting the portion of the paper between said gripping devices.

8. In a wrapping machine, the combination of a continuously rotating drum, a plurality of paper gripping and holding devices mounted upon and rotating with the drum, each gripping device being provided with a movable section, means for opening said sections as they are presented to a given point during the travel of the drum, additional means for closing said sections after passing such point for gripping the intervening portion of the paper, a series of rotary twisters mounted on the drum and alternating with the gripping devices, and means for rotating said twisters during the rotation of and separately from the drum.

9. In a wrapping machine, a continuously rotating drum having gripping jaws rotatable transversely of the direction of movement of the drum for feeding a strip of paper and twisting it transversely.

10. In a wrapping machine, in combination with a former, and means for drawing the paper through the former including a rotary drum and gripping devices mounted on the drum with means for opening and closing the gripping devices on the paper at regular predetermined intervals, and additional mechanism also mounted on the drum for severing the paper in sections and twisting the ends of said sections.

11. In a wrapping machine in combination with a former, continuously moving means for feeding a strip of paper through the former comprising gripping jaws moving in one direction and rotatable transversely to such direction of movement, and additional gripping devices moving in the same direction with said jaws.

12. In a wrapping machine, in combination with a former, rotary means for drawing the paper through the former, mechanism

nism for feeding and depositing the articles to be wrapped on to the paper while being drawn through the former, additional means moving with the rotary means for cutting the paper into sections at one end of the article, and further means also moving with said rotary means for twisting the ends of the paper around each article.

13. In a wrapping machine, in combination with a rotary drum, a twisting device mounted upon the drum and rotatable at right angles to the axis thereof.

14. In a wrapping machine, in combination with a rotary drum a twisting device revolving with the drum and having a separate rotary action, said twisting device being provided with a cutter for severing the paper therein.

15. In a wrapping machine, a twisting device comprising gripping jaws movable bodily about an axis and having a separate rotary action at right angles to said axis.

16. In a wrapping machine, a twisting device comprising a rotary cylinder movable bodily about one axis and having independent rotary motion about another axis at right angles to the axis of the cylinder, said cylinder being divided into segments, and means for opening and closing one of said segments during the rotation of said cylinder about the first named axis.

17. In a wrapping machine, a gripping and holding device comprising opposite rings movable toward and from each other and each provided with a pair of gripping jaws for receiving and gripping the paper in combination with a gripping and twisting device for twisting said paper while held in the first named gripping device.

18. A wrapping machine comprising a rotary frame, means for rotating the frame, clamps on the frame, means for engaging the clamps to automatically open and close them at certain points in the rotation of the frame, means for feeding wrapping material to the clamps, cutting means for severing the wrapping material into wrappers, and means for twisting each wrapper between clamps.

19. A wrapping machine comprising a rotary frame, means for rotating the frame, clamps on the frame, means for engaging the clamps to automatically open and close them at certain points in the rotation of the frame, means for feeding wrapping material to the clamps, cutting means for severing the wrapping material into wrappers, means for twisting each wrapper between clamps, and means for depositing an article to be wrapped into each wrapper before said wrappers are twisted.

20. A wrapping machine comprising a rotary frame, clamps consisting of co-acting jaws arranged in pairs on the periphery of the frame, means for holding the jaws shut, a cam with which the clamps engage, said cam opening the clamps, a means for feeding wrapping material, means for depositing articles to be wrapped in the wrapping material, and a tumbler to seize and twist the wrapping material within each pair of clamps.

In witness whereof I have hereunto set my hand this 26th day of October 1907.

HENRY R. EVANS.

Witnesses:

H. E. CHASE,

C. M. McCORMACK.