

M. WERTHEIMER.
WRAPPING MACHINE.
APPLICATION FILED MAY 29, 1912.

1,057,193.

Patented Mar. 25, 1913.

3 SHEETS-SHEET 1.

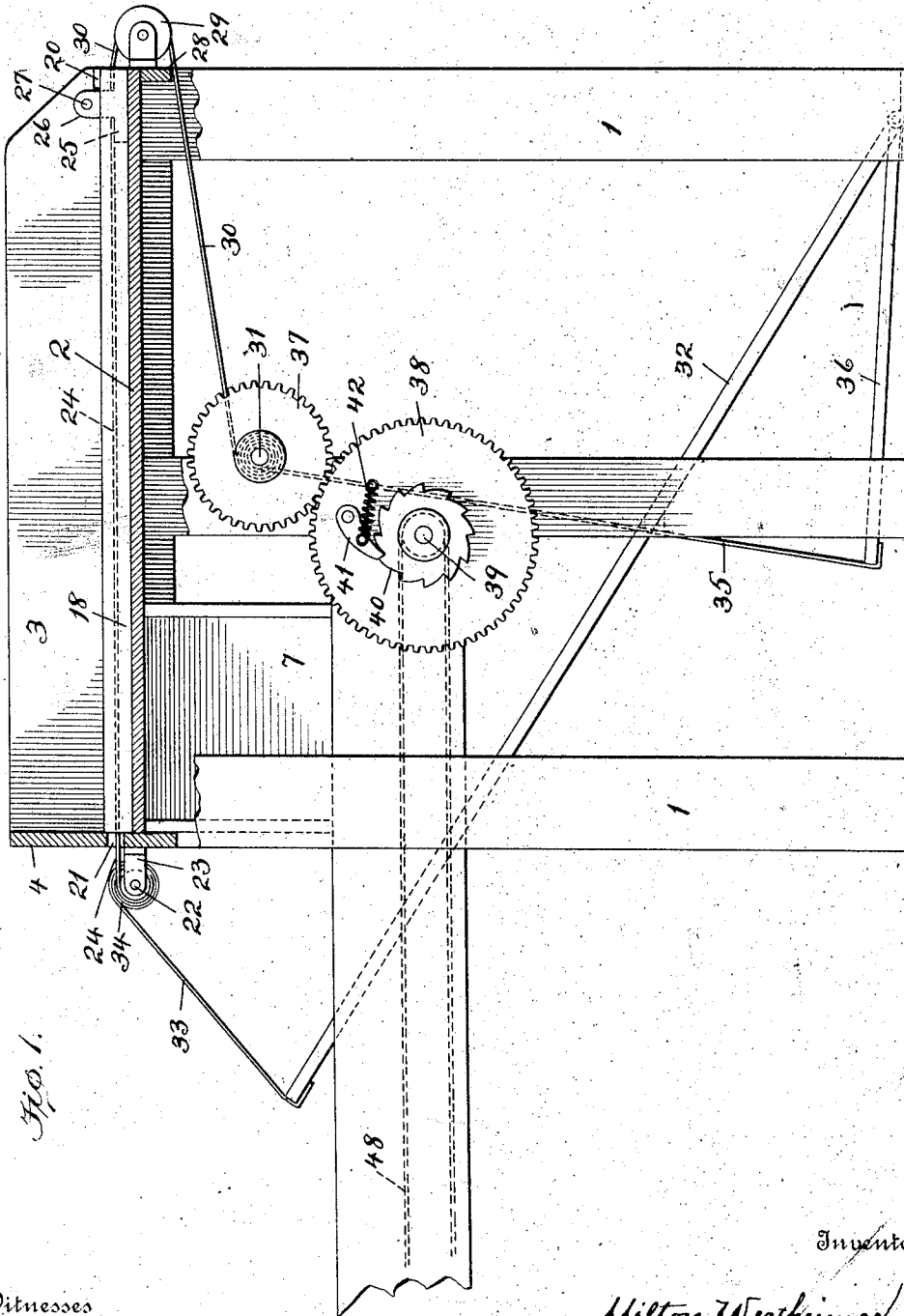


Fig. 1.

Witnesses

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G. Herd Vogt.

By

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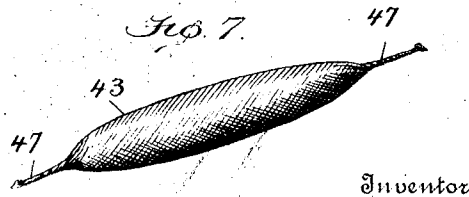
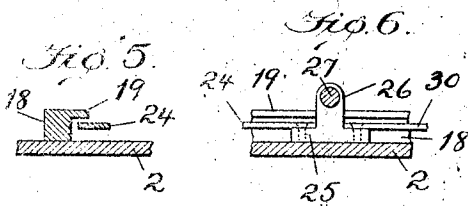
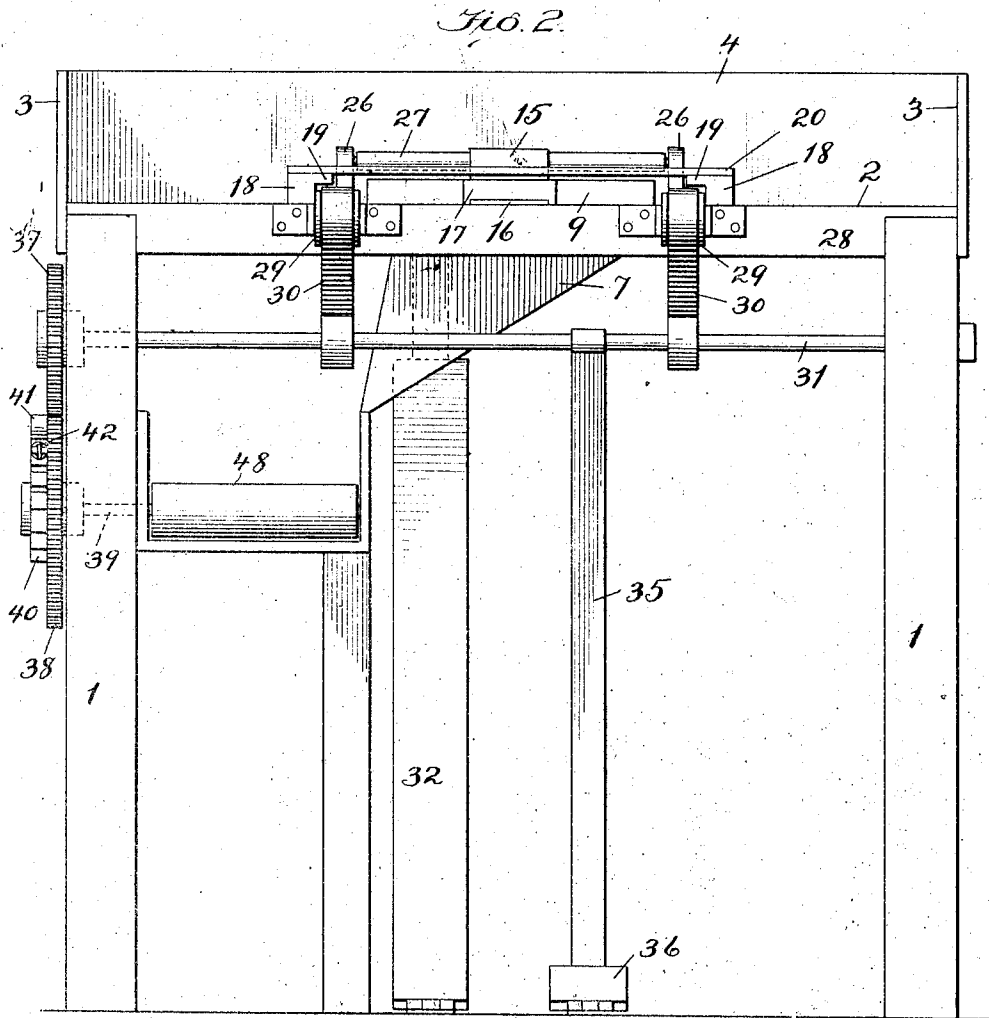
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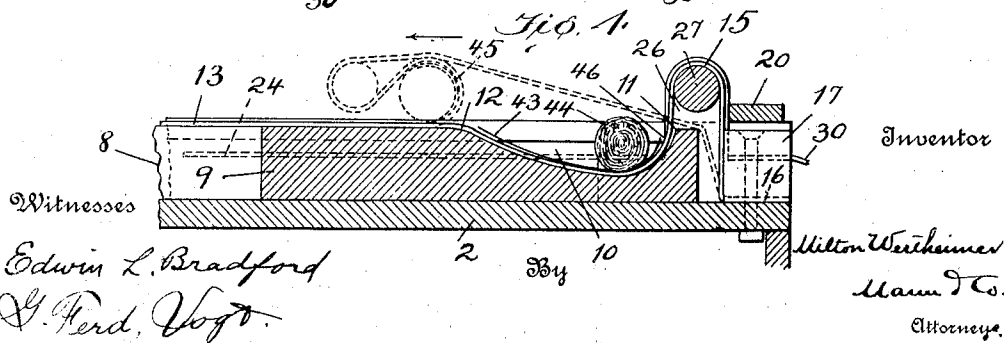
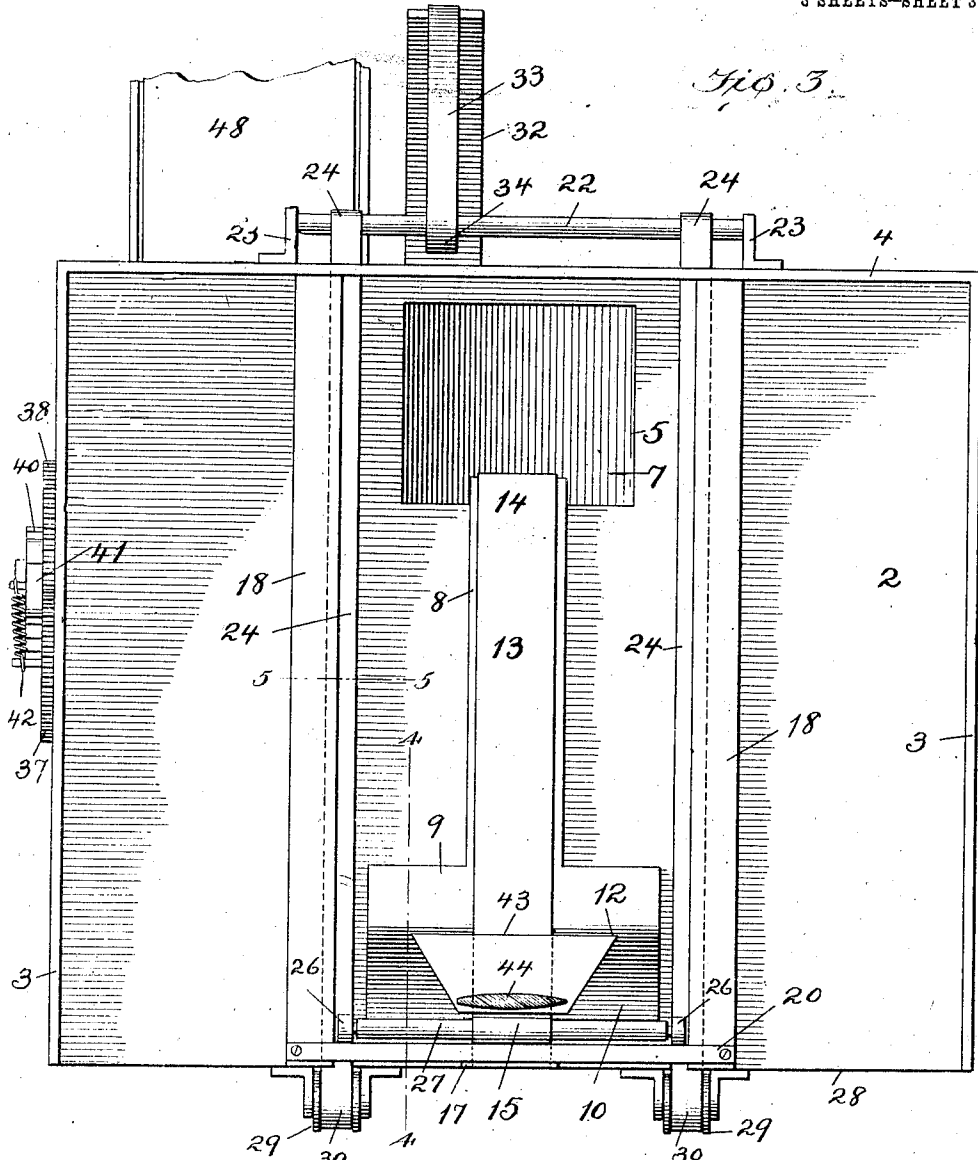
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

MILTON WERTHEIMER, OF BALTIMORE, MARYLAND.

WRAPPING-MACHINE.

1,057,193

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed May 29, 1912. Serial No. 700,404.

To all whom it may concern:

Be it known that I, MILTON WERTHEIMER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Wrapping-Machines, of which the following is a specification.

This invention relates to improvements in wrapping or packaging machines and particularly to a machine which will wind the wrapper about the article and enable the ends to be twisted sufficiently to retain the same in the wound condition.

The machine is particularly adapted to wrap bodies or articles having a circular shape in cross-section whereby the same may be rolled over the wrapper. As an example of such an article attention is directed to cigars, stick candy and other objects of a similar shape.

The main object of the invention is to provide a machine of simple construction which will enable the article to be wrapped and aid the operator in effecting a twisting of the ends in a speedy and expeditious manner.

The accompanying drawings illustrate a practical embodiment of the invention wherein,—

Figure 1, illustrates the machine partly in vertical section and side elevation. Fig. 2, shows a front or feed-end elevation of the same; Fig. 3, a top plan view thereof; Fig. 4, an enlarged vertical sectional detail taken on the line 4—4 of Fig. 3. Fig. 5, illustrates an enlarged cross-sectional detail of one of the side guides,—this section being taken on the line 5—5 of Fig. 3. Fig. 6, shows a side elevation of one of the roller sustaining carriages or brackets, and Fig. 7, illustrates a package such as a cigar as it is wrapped with its ends twisted when it leaves the machine.

In the drawing the numeral, 1, designates the corner posts or supports which sustain a horizontal table, 2, the latter preferably having vertical side and rear walls, 3, and, 4, respectively to prevent the articles, which are usually piled or laid thereon in readiness to be wrapped from rolling off. At the rear, the table has an opening, 5, through which the wrapped packages may be dropped into an inclined chute, 7, which latter is located beneath and at the under side of the table.

A work bed is provided on the upper sur-

face of the table, 2, and has a smooth central rear body portion, 8, which extends forwardly from the edge of the opening, 5, and a wider front end, 9, where the wrapping operation begins. This work bed is of substantially a T-shape,—the head of the T forming the wrapper-attaching end and the leg of the T serving as the rolling bed on which the rolling of the package takes place while the ends of the wrapper are being twisted. The front end, 9, of the work bed is best illustrated in Fig. 4, wherein it will be seen that the same is provided with a concavity, 10, which drops from substantially the front edge, 11, and then gradually curves upwardly and at, 12, merges into the top surface of the wider end and in front of the rear body portion, 8. By referring to Figs. 3, and 4, it will be noted that the top surface of the work bed is elevated with respect to the top surface of the table which is desirable because it gives room for the operator's hands during the twisting operation, as will presently be explained. A flexible belt or strip, 13, extends over the upper surface of the work bed and in the present instance one end, 14, of this belt or strip is secured at the rear end of the leg or body, 8, adjacent to the opening, 5, and from that point of attachment said belt or strip extends forwardly along and over the said top surface and then extends centrally across the wider front end, 9, and dips or follows the contour of the concavity, 10. At the front end the belt or strip normally extends upwardly from the concavity and forms a loop, 15, and the extreme front end, 16, of said belt or strip extends beneath a block, 17, and is rigidly secured thereto. It will thus be noted that the belt or strip, 13, has no longitudinal movement bodily because its two ends are rigidly secured, and also that it has a fullness or is longer than the work bed which enables the loop, 15, to be formed therein.

On top of the table, 2, and at each side of the work bed, 8, there are provided longitudinal guide bars, 18, each of which has an overhanging top flange, 19, as clearly seen in Figs. 2, 5 and 6, of the drawings. These guide bars extend all the way across the table top from the front to at least the opening, 5, at the end of the work bed. At the front end the guide bars sustain a horizontal stop bar, 20, and at the rear ends

of the guide bars the wall, 4, of the table is provided with a slot, 21, for a purpose which will presently be described.

A horizontal shaft, 22, is sustained in suitable bracket-bearings, 23, at the rear of the table and said shaft serves as a drum on which one of the ends of two spaced-apart belts, 24, are wound. These belts extend from the drum through the slot, 21, and then along the inner sides of the guide bars, 18, as best shown in Figs. 3, 5 and 6 and the overhanging flanges, 19, serve to prevent the belts from flopping up and down as they are reciprocated as will presently be explained. The belts extend forwardly over the table and each has its forward end attached to a bearing block, 25, which latter is provided with an upwardly extending lug, 26. One bearing block is provided for each guide bar and each block projects beneath the overhanging flange, 19, of the guide bar and the belts are secured to the upper surface of the blocks at one side of lug, 26, as shown in Fig. 6. Thus it will be understood that there are two bearing blocks, 25,—one for each belt end, 24, and both blocks have the same relative vertical positions between the front and rear ends of the guide bars and one being at one side of the work bed and the other at the opposite side of said bed, as can be seen in Figs. 2 and 3 of the drawings. A roller, 27, extends horizontally between and has its ends supported in the two spaced-apart lugs, 26, of the bearing blocks and said roller extends through the loop, 15, of the belt or strip, 13, as best shown in Fig. 4.

On the front vertical edge, 28, of the table, I provide two idler or guide pulleys, 29, each of which has position at the front end of one of the guide bars. Two belts, 30, each have an end secured to one of the bearing blocks and said belts then pass over the pulleys, 29, and extend downwardly and then rearwardly beneath the table, 2, where their other ends are wound on a drum shaft, 31, that extends horizontally below the table, as seen in Figs. 1 and 2.

From the foregoing explanation it will be understood each bearing block, 25, is connected by two belts, one of which, 24, extends rearwardly along the guide bar and through slot, 21, and has its end wound on shaft, 22, and the other belt, 30, extends forwardly from the bearing block and then downwardly over idler, 29, and has its end wound on drum shaft, 31. Obviously, if shaft, 22, is revolved so as to wind belts, 24, thereon, the bearing blocks, 25, and roller, 27, will be drawn rearwardly,—the roller traveling horizontally over the work-bed, 8, and at this same time the two belts, 30, will be unwound from drum shaft, 31, and will cause the latter to revolve. This movement of the bearing blocks and roller rearwardly is effected

in the present instance by means of a foot treadle, 32, which will be depressed by the foot of the operator, and through the connection of said treadle with the shaft, 22, by a band or strap, 33. One end of this strap is secured to the treadle and the other end is wound at, 34, on the shaft, 2,—the winding being done in a direction reverse to the winding of the straps, 24, on said shaft, 22, so that the unwinding of strap, 33, from shaft, 22, will cause the winding of the straps, 24, on said shaft. It will also be seen that the winding of the straps 24, on shaft, 22, will cause the unwinding of straps, 30, from the drum shaft, 31.

By again referring to Figs. 1 and 2 it will be seen that a flexible strap, 35, is wound on the drum shaft, 31, in a direction that will cause it to wind thereon while the straps, 30, are unwinding therefrom, and said strap, 35, depends from said drum shaft and is attached to a foot treadle, 36. Thus it will be seen that wheel treadle, 32, is depressed the bearing blocks, 25, and roller, 27, will travel rearwardly over the table and treadle, 36, will be raised and when treadle, 36, is depressed a reverse movement of the same parts takes place.

The outer end of drum shaft, 31, is provided with a pinion, 37, which meshes with and turns a gear, 38, which latter is loosely carried on a short horizontal conveyer shaft, 39. A ratchet wheel 40, is rigidly attached to said conveyer shaft and has position at the side of the loose gear, and a pawl, 41, is pivotally mounted at the side of the loose gear so as to engage the ratchet wheel. A spring, 42, yieldingly holds the pawl against the face of the ratchet wheel. It will thus be seen that as the pinion, 37, is turned in one direction the gear, pawl and ratchet will rotate conveyer shaft, 39, but when a return movement of the pinion, gear and pawl takes place the latter will simply ride over the ratchet wheel. Thus the conveyer is given an intermediate movement at each operation of foot treadle, 32. The operation of wrapping is carried on as follows: A wrapper, 43, of paper tin foil or other material, or of a paper with tin foil sheet laid thereon, is laid in the concavity, 10, at the front of the work-bed and on top of the flexible belt or strip, 13, as shown in Figs. 3 and 4,—the wrapper being of greater width than the belt or strip and laying cross-wise thereon with its ends projecting beyond the opposite longitudinal side edges of the belt or strip. The article to be wrapped, which in the present instance is shown as a cigar, 44, is then laid on the wrapper in said concavity and the same will thus have position in front of but below the roller, 27, which passes through the loop 15, of said belt or strip. The operator then begins a depression of the foot treadle, 32, and

causes shaft, 22, to revolve in a direction that will wind the belts, 24, thereon thus pulling or drawing the forward ends of said belts and the bearing blocks, 25, attached thereto rearwardly along the guide bars, 18. This rearward sliding of the bearing blocks carries the roller, 27, and the loop, 15, of the belt or strip, 13, over the cigar and in doing this the belt or strip forms a second loop, 45, around the cigar or other article and the edge, 46, of the wrapper which is to first wind about the article. The continued rearward movement of the roller, 27, will cause the cigar or other article to roll up out of the concavity and onto the central body portion, 8, of the work bed at which point the wrapper will encircle the body of the cigar entirely but the ends will project over the side edges of said central body portion, 8. The operator then grasps the two projecting ends of the wrapper and holds them firmly with the fingers while the cigar continues to revolve and roll along the central body, 8,—of course the hands of the operator will follow along with the rolling cigar while the ends of the wrapper are being held by the fingers. This revolution of the wrapper body, and the inclosed cigar, while the ends of the wrapper are being held by the operator against rotation, will obviously cause the two held ends to become twisted,—both end twists, 47, (see Fig. 7 of the drawing) being made in the same direction, and the wrapper thus held by the twists. The movement of the roller is greater than the length of the work bed, 8, consequently the wrapped cigar or other article will be carried to and dropped from the end of the central body portion, 8, through the opening, 5, and into chute, 7, which detracts the wrapper and twisted end package onto an endless conveyer, 48, which intermittently moves forward and carries the wrapped cigars. During the travel of the bearing blocks, 25, rearwardly to effect a wrapping of the article, the belts, 30, will be drawn from the drum shaft, 31; which effects a revolution of said drum shaft in such a direction that strap, 35, will be wound thereon and thereby elevate treadle, 36, therefore when the wrapping operation is completed the said treadle, 36, is elevated and by depressing the latter the bearing blocks and roller are returned to their normal position to begin wrapping another package. On this return motion the stop bar, 20, which extends horizontally between the guide bars will form a stop for the bearing blocks to limit the forward movement of the latter.

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

1. The combination with a stationary work-bed, of a flexible strip supported by the work-bed and having its ends rigidly se-

cured at opposite ends of the work-bed and extending over the work-bed on which latter the wrapper and the article to be wrapped may be laid and means for forming a loop in the strip to embrace the wrapper and article and moving the loop over the work-bed to roll the wrapper and article along the work-bed. 70

2. The combination with a stationary work-bed having a concavity at one side, of a flexible strip extending over the work bed and across the concavity; means for forming a loop in the strip adjacent to the concavity and devices for moving said means to move the loop across the concavity and along the work-bed. 75 80

3. The combination with a stationary work-bed, of a flexible strip extending over the work-bed and having its ends secured at opposite ends of the work-bed,—said strip having a fullness between its ends whereby to form a loop; a movable device extending through the loop of the strip and means for actuating said device to move it together with the loop over the work bed. 85 90

4. The combination with a stationary work-bed, of a flexible strip extending over the work-bed and having its ends secured at opposite ends of the work-bed,—said strip having a loop between its ends; a roller passing through the said loop and means at the opposite ends of the roller for moving the same lengthwise of the work-bed. 95

5. The combination with a work-bed having a concavity, of a flexible strip extending over the work-bed and across said concavity and the two ends of said strip being secured; a rod extending across the concavity and over which the flexible strip passes, and means for moving the rod over the concavity and lengthwise of the work-bed. 100 105

6. The combination with a work-bed, of guide devices extending parallel with and at opposite sides of the work-bed; a flexible strip extending over the work-bed; a bearing block adjacent to each guide device; a roller carried by the bearing blocks and extending over the work-bed and beneath the flexible strip; means for moving the bearing blocks to carry the roller in one direction over the work-bed, and means for returning the bearing blocks and roller. 110 115

7. The combination with a table having a discharge opening, of a work-bed on said table and terminating at said opening; a flexible strip extending over the work-bed; a roller extending across the work-bed and beneath the flexible strip and means for moving the roller toward and from the opening in the table. 120 125

8. The combination with a table having a discharge opening, of a work-bed on the table and extending from the opening toward one side of the table; a flexible strip having one end secured adjacent to the table- 130

opening and extending over the work bed; guide-bars on the table at opposite sides of the table-opening and work-bed; a bearing block at each guide bar; a roller sustained by said bearing blocks and extending across the work-bed and beneath the flexible strip and means for reciprocating the bearing blocks and roller across the table.

9. The combination with a table having a discharge opening, of a work-bed on said table and terminating at said opening; a flexible strip extending over the work-bed;

a roller extending across the work-bed and beneath the flexible strip; means for reciprocating the roller over the work-bed; a conveyer to receive wrapped articles discharged through the table-opening, and means for moving the conveyer.

In testimony whereof I affix my signature in presence of two witnesses.

MILTON WERTHEIMER.

Witnesses:

CHARLES B. MANN, Jr.,
G. FERD. VOGT.