April 25, 1939 W. B. BRONANDER 2,155,398

WRAPPING MACHINE

Filed July 11, 1936 4 Sheets-Sheet 1

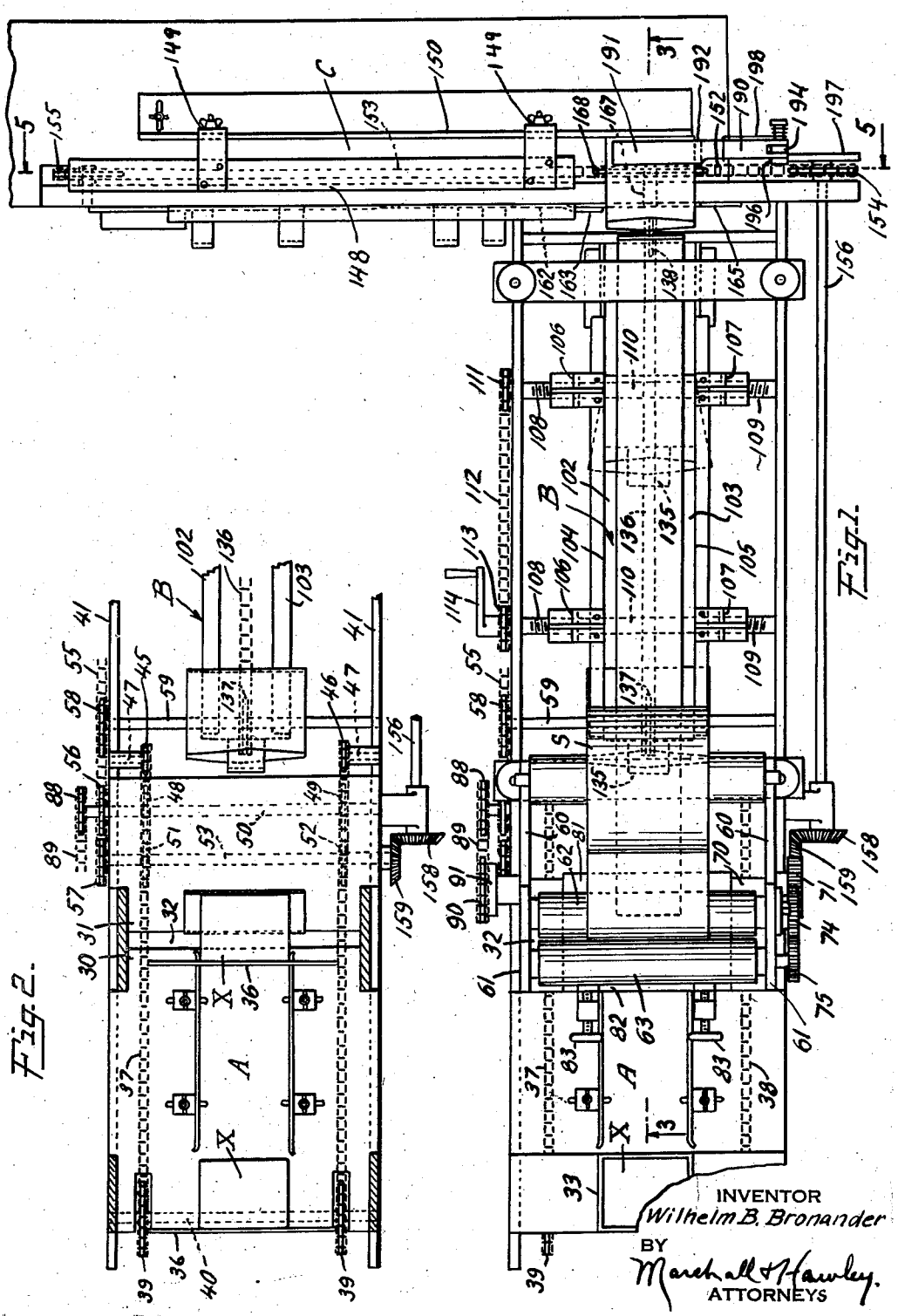

Fig. 2.

Fig. 1.

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WRAPPING MACHINE

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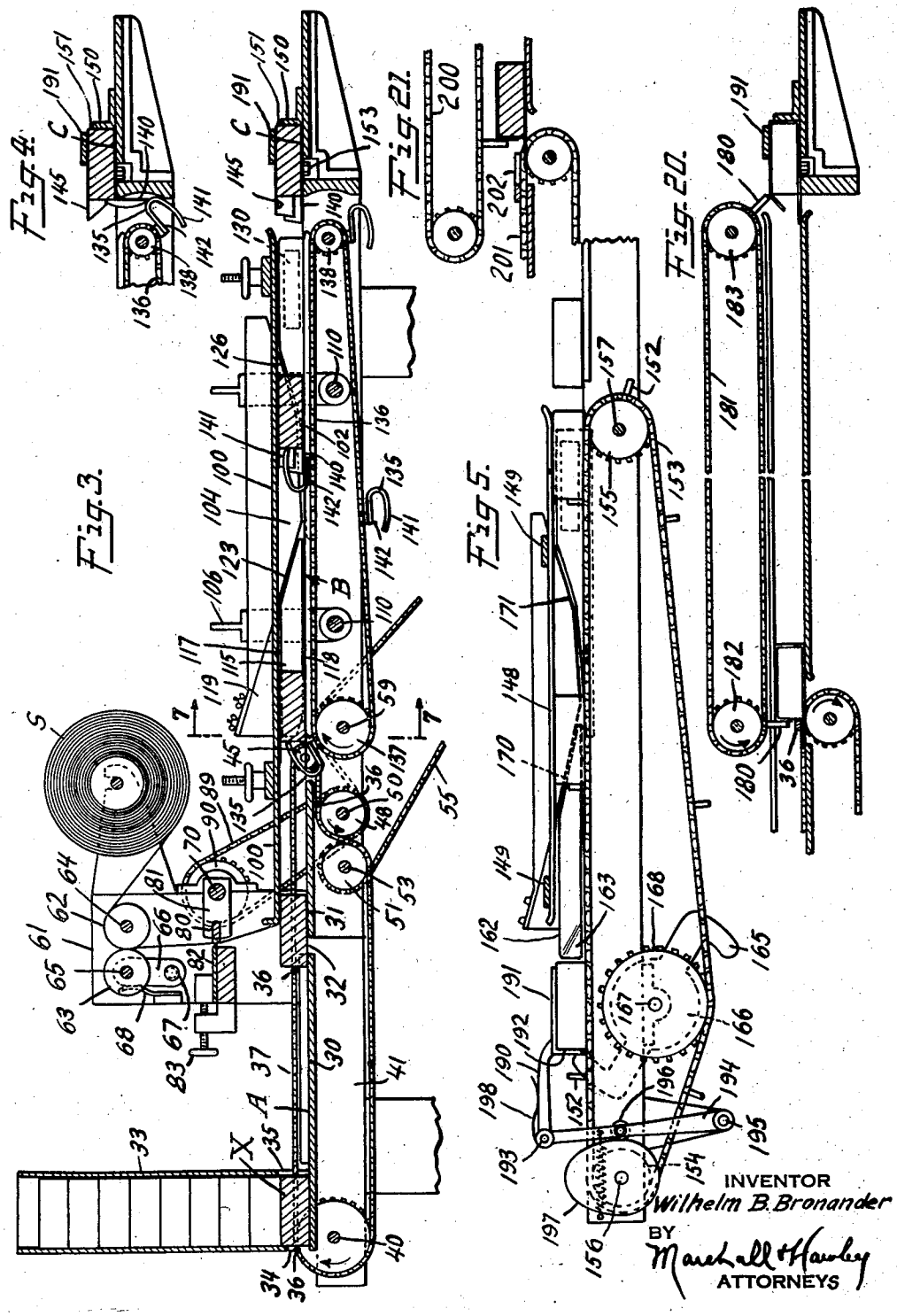

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WRAPPING MACHINE

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Fig. 6.

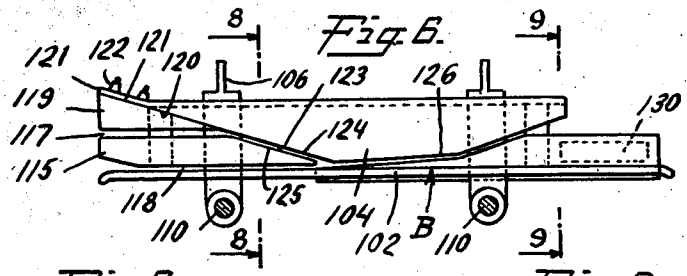


Fig. 7.

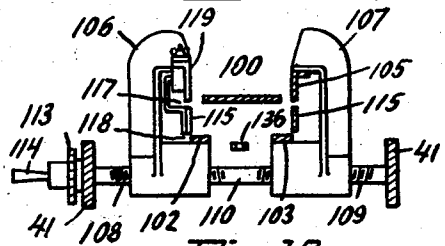


Fig. 8.

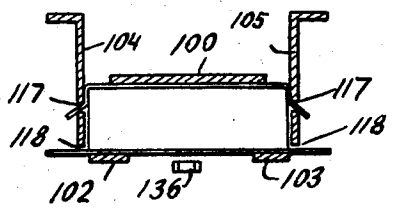


Fig. 10.

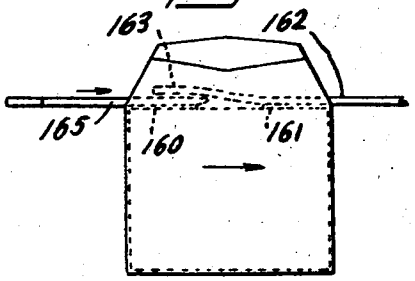


Fig. 9.

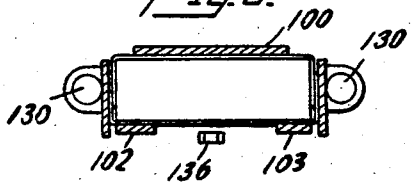


Fig. 11.

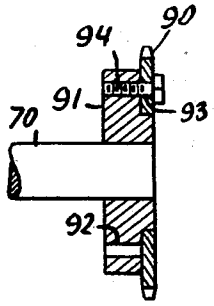


Fig. 12.

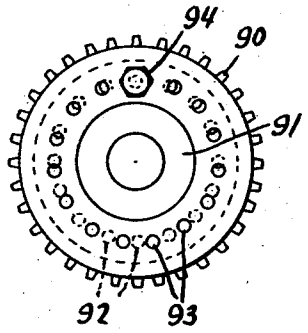
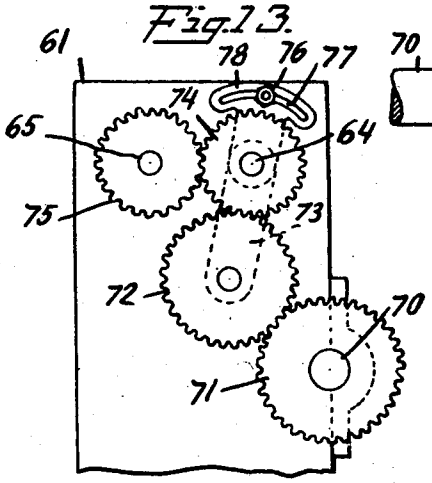


Fig. 13.



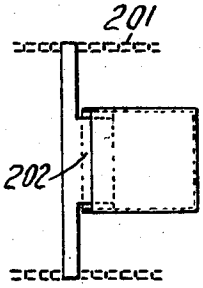


Fig. 22.

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Fig. 14.

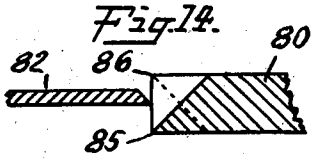


Fig. 15.

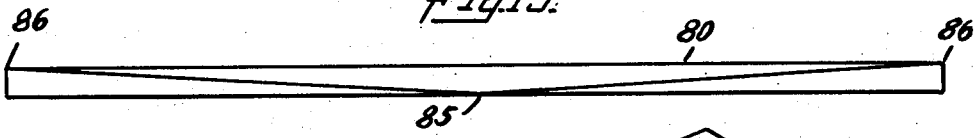


Fig. 16.

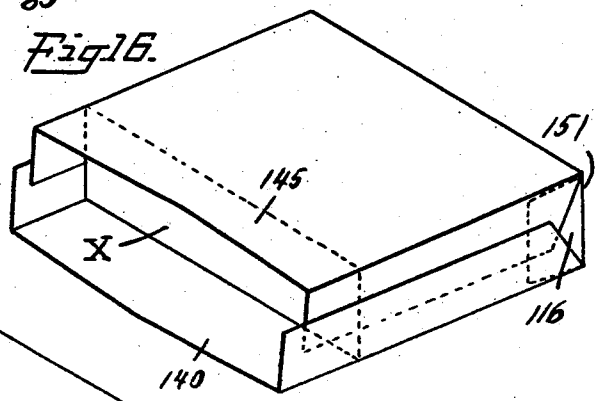


Fig. 17.

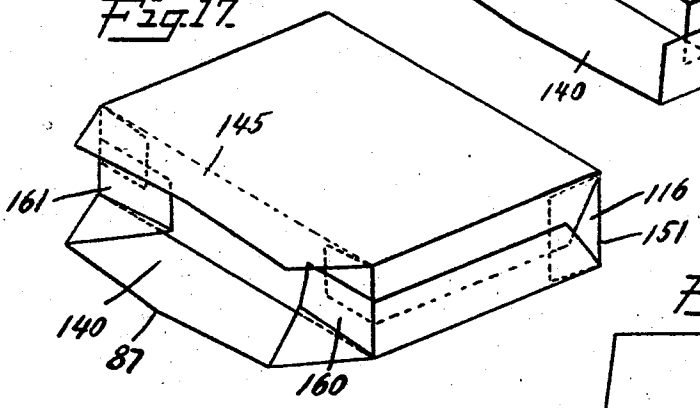


Fig. 19.

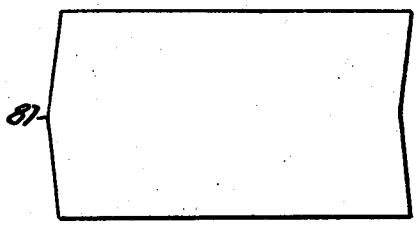
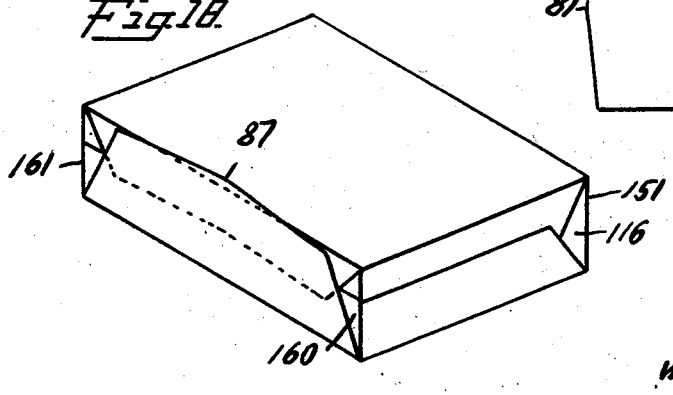


Fig. 18.



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Patented Apr. 25, 1939 2,155,398

UNITED STATES PATENT OFFICE

2,155,398

WRAPPING MACHINE

Wilhelm B. Bronander, Montclair, N. J.

Application July 11, 1936, Serial No. 90,091

19 Claims. (Cl. 93—2)

This invention relates to wrapping machines.

The invention has for its salient object to provide a machine for wrapping articles that is simple and practical in construction, comprises few parts and will rapidly, effectively and efficiently wrap the articles or packages.

Another object of the invention is to provide a machine of the character described having the paper feed, cutting mechanism and folding and wrapping mechanism so relatively constructed and arranged that the machine can be easily and quickly adjusted for use in wrapping packages of different sizes.

Further objects of the invention will appear from the following specification taken in connection with the drawings which form a part of this application, and in which

Fig. 1 is a top plan view somewhat diagrammatic showing a machine constructed in accordance with the invention;

Fig. 2 is a plan view of the front portion of the machine, partly in section, parts being removed for the sake of clearness;

Fig. 3 is a longitudinal sectional elevation taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a diagrammatic view showing one set of feeding means in the position taken when the feeding members have discharged the article and wrapper to the final folding and wrapping mechanism;

Fig. 5 is a longitudinal sectional elevation taken substantially on line 5—5 of Fig. 1 showing the final folding and wrapper closing mechanism;

Fig. 6 is a detail elevational view of the initial folding means;

Fig. 7 is a sectional elevation taken substantially on line 7—7 of Fig. 3;

Figs. 8 and 9 are sectional elevations taken substantially on line 8—8 and 9—9 of Fig. 6;

Fig. 10 is a detail plan view showing the operation of the tuckers for tucking the rear ends of the wrapper prior to folding the ends across the rear end of the article;

Fig. 11 is a detail sectional elevation of the feed sprocket for the paper cutting mechanism;

Fig. 12 is an elevational view taken at right angles to Fig. 11;

Fig. 13 is an elevational view showing the gearing for driving the paper feed rollers;

Fig. 14 is a detail sectional elevation taken through the cutting knives;

Fig. 15 is an end elevation of the rotary cutting knife;

Figs. 16, 17 and 18 are perspective views showing the wrapper in three different positions of the wrapping operation;

Fig. 19 is a plan view of the wrapper blank;

Fig. 20 is an elevational view partly in section showing another form of feeding means for the second feeding mechanism;

Fig. 21 is an elevational view partly in section showing a further form of feeding mechanism; and

Fig. 22 is a plan view of the form of feeding member used on the first feeding mechanism shown in Fig. 21.

The invention briefly described consists of a wrapping machine comprising three successively acting feeding and folding mechanisms.

The wrapper is fed in the form of a paper strip or web across the path of movement of the article and is fed at such a rate and severed at such a point in the cycle of operation that it is held by the feeding means as the sheet or web is folded across the top, advance end and bottom of the article. The cutting mechanism cuts the strip or web when the proper length has been fed.

The article and wrapper are fed by endless feeding members along the initial table or support to the second support. The article and wrapper are then fed by endless feeding means along the second support and during their passage along this support tucks are placed in the advance ends of the wrapper and the ends are folded across the ends of the article. The second feeding mechanism may be speeded up to operate at a faster rate of speed than the first feed so as to "take the article and wrapper away" from the first feeding mechanism.

The article and wrapper are then discharged from the second support to a third table or support. They are initially fed along this support by a reciprocating feeding member and are then engaged and fed by continuously acting feeding members. During the movement along the third support the rear ends of the wrapper are tucked and are folded across the rear end of the article, thus completing the wrapping operation.

In the particular form of the invention shown the last named support and feeding means are disposed at right angles to the first two supports and feeding means. There is substantially no interruption in the operation and one set of feeding means takes hold as soon as the article and wrapper have been delivered thereto by the preceding feeding means. In the form of the invention shown in Fig. 20 there is no interruption between the first feeding operation and the second feeding operation.

Further details of the invention will appear from the following description.

In the form of the invention illustrated in the drawings, there are three sets of operating mechanism which operate successively on the article and wrapper. Furthermore, there are three supports or tables along which the article and wrapper are fed. The first supporting table is shown at A, the second at B and the third at C. It will be noted that the support or table C is disposed at right angles to the supports A and B. The support A comprises two sections 30 and 31 which are separated by a gap or space 32.

The articles X to be wrapped are disposed in a hopper 33 which extends above the support A and has openings 34 and 35 adjacent the support at the bottom of the hopper.

The articles X are fed from the hopper along the support by a plurality of spaced feeding members or cross rods 36 carried by a pair of endless feeding members, such as belts or chains 37 and 38.

As clearly shown in Fig. 3, the rods or feeding members 36 engage the rear edges of the articles successively and feed the articles through the opening 35 and along the section 30 of the support A.

The endless feeding members 37 and 38 are supported at one end on sprockets 39 carried by a shaft 40 mounted in a frame 41. At the other ends the feeding members 37 and 38 pass around idler sprockets 45 and 46 mounted on stub shafts 47 carried by the frame members 41. From the idlers 45 and 46 the feeding members 37 and 38 pass around sprockets 48 and 49 mounted on a shaft 50. The feeding members 37 and 38 pass over the sprockets 48 and 49 and beneath sprockets 51 and 52 carried by a shaft 53. The shafts 50 and 53 are driven by a chain 55 which engages sprockets 56 and 57 mounted on the shafts 50 and 53 and also engages a sprocket 58 mounted on a shaft 59 carried by the frame members 41.

Paper feed mechanism

The paper for the wrappers, which in this instance may be wax paper or a heat sealing paper marketed under the trade name Cellophane, is mounted in the supply roll S carried by brackets 60 formed on frame members 61. The frame members 61 also have mounted thereon a pair of feed rolls 62 and 63. The roll 62 is rotatable on a fixed spindle 64 and the roll 63 is mounted on a spindle 65 carried by pivoted links 66 pivoted at 67 in the frame members 61. A spring 68 presses the roll 63 toward the roll 62 to maintain the desired feeding pressure between the rolls.

The paper feed rolls are driven from a shaft 70 on which the rotary cutting knife is mounted, as hereinafter described, by means of the gearing shown in Fig. 13. From this figure it will be noted that a gear 71 mounted on the shaft 70 meshes with a gear 72 carried by an arm 73 pivoted on the shaft 64. This shaft, on which is mounted the roll 62, has secured thereto a gear 74 which meshes with a gear 75 mounted on the shaft 65 which carries the feed roll 63.

The arm 73 can be adjusted about the axis of the shaft 64 to permit different sizes of gears to be used in the place of the gear 71, thus varying the speed of rotation of the feed rolls and the rate and lengths of paper fed thereby. The arm 73 is held in adjusted position by means of a nut or bolt 76 which passes through an arcuate slot 77 formed in the upper end 78 of the arm.

Paper cutting mechanism

The paper cutting mechanism comprises a rotary knife 80 carried by an arm 81 fixed to the shaft 70 and a stationary knife 82 which is adjustable toward and away from the axis or shaft 70 by means of a screw 83. The shape of the knife 80 is shown in Figs. 14 and 15 from which it will be seen that the knife is V-shaped, the central portion of the knife shown at 85 being disposed in advance of the end portions shown at 86. The knife is beveled, as shown in Fig. 14.

The blanks cut from the paper strip by the knife take the form shown in Fig. 19, the object of the V-shaped end being clear from Fig. 18 from which it will be seen that the point or central portion 87 of the V projects above the article and forms a tab by means of which the wrapper can be pulled away and removed from the article.

The rotary cutting knife is operated by a sprocket and chain connection to the shaft 50. This shaft has mounted thereon a sprocket 88 which is connected by a chain 89 to drive a sprocket 90 which is adjustably connected to a disk or wheel 91 fixed to the shaft 70. This adjustable connection is shown particularly in Figs. 11 and 12. The disk 91 is provided with a plurality of threaded openings or apertures 92 and the sprocket 90 is provided with a plurality of openings 93. One more opening is provided in the disk than in the sprocket so that a differential adjustment between these two parts can be secured. For instance, sixteen openings may be formed in the disk and fifteen in the sprocket. The sprocket can be rotated on the disk to any desired position to adjust the timing or operation of the cutting knife and when properly positioned a screw or bolt 94 is passed through the opening 93 in the sprocket and is threaded into the opening 92 in the disk. Thus, the shaft can be properly timed to cut the paper in accordance with the length fed by the feed rolls, it being remembered that the rate of rotation of these rolls can be adjusted by changing the gear 71. It will also be evident that the cutting of the paper must be properly timed with reference to the feeding of the article in order to feed the paper to the desired extent through the gap or slot 32 between the sections 30 and 31 of the support A. The paper should be so fed and severed that as the article engages the paper and feeds the paper forwardly on the support section 31 the free ends of the paper will properly overlap the rear end of the article.

As the article and wrapper are fed over the support 31 they will be disposed beneath a top wall 100 which is adjustably mounted above the support 31 and operates to hold the wrapper down against the upper surface of the article.

The paper feed, article feed and cutter feed are so timed that the article will engage the paper and be folded around the advance end and top and bottom of the article before it is cut, the cut being made when the proper length has been fed to provide the overlapping ends of the right lengths.

The article and wrapper are fed by the feeding members 36 between the walls 31 and 100 and across the support or table section 31 and are discharged thereby to the second support or table B. This support or table comprises a pair of spaced supports 102 and 103 which are connected to and project inwardly from side walls 104 and 105 carried by brackets 106 and 107. The brackets 106 and 107 are adjustably mounted on the frame members 41 and are adjustable to-

ward and away from each other by right and left hand screws 108 and 109 formed on spindles 110, 110. These spindles are connected by sprocket and chain connections 111, 112, 113 and one of the spindles has secured thereto a crank 114 by means of which the spindles can be rotated. As these spindles are rotated the side walls 104 and 105 and the spaced supports 102 and 103 are moved toward and away from each other. The top wall 100 above described extends above the support B as well as above the support A.

The walls 104 and 105 have formed at the entrance end thereof tuckers 115, 115 which tuck the advance edges of the wrapper against the ends of the article, one of the advanced edge tucks being shown at 116 in Figs. 16, 17 and 18. Above the tuckers are formed slots 117 which receive the upper projecting end flaps or folds and below the tuckers are formed slots 118 which receive the lower projecting end flaps or folds. The upper slots 117 are formed between the upper edges of the tuckers 115 and the lower edges of adjustably mounted pieces 119 having inclined upper edges 120 which engage inclined supports 121 and are adjustable relative thereto, being secured in adjusted position by nuts 122. This adjustment is made to provide for different thicknesses of articles being wrapped.

The slots 117 lead to downwardly inclined slots 123 which are formed between lower edges 124 of the side walls 104 and 105 and the upper edges 125 of the tuckers 115. As the upper end folds travel through the slots 117 and downwardly through the slots 123 they will be folded downwardly and inwardly against the ends of the article. After this fold has been completed the lower projecting end folds or flaps engage the upwardly inclined slots 126 and are folded thereby upwardly and inwardly against the downwardly folded end flaps. After these end flaps have been folded against the ends of the article the article is fed between the heaters 130 which cause the wax in the wax paper to be softened, thus sealing the ends of the article.

The articles and wrappers are fed along the support B by means of spaced U-shaped feeding members 135 which are carried by an endless belt or chain 136 mounted on sprockets 137 and 138. The sprocket 137 is secured to the shaft 59 which is driven in the manner hereinbefore described. From the showing in Fig. 1 it will be noted that the feeding members 135 are disposed centrally and between the endless chains 37 and 38. Furthermore, these members are so spaced that they will move upwardly in the direction of the arrow shown in Fig. 3 at a period in the operation of the feeding members 36 in which these members are out of the way so that the members 36 will not be at any time disposed in the path of movement of the members 135.

From the showing in Fig. 3 it will be noted that one of the feeding members 135 is disposed with the upper leg of the U-shaped member in engagement with the rear edge of the article, the overlapping end 140 of the wrapper being disposed between the two legs 141 and 142 of the feeding member 135.

Fig. 4 illustrates the path of movement of the feeding member 135 as it leaves the article and wrapper and from this figure it will be noted that the outer leg 141 of the member 135 is in engagement with the end 140 of the wrapper and has folded this end downwardly. As soon as the feeding member 135 moves away from the end 140 of the wrapper this end will immediately snap upwardly to the position parallel to the upper overlapping end 145.

From the foregoing description it will be noted that as the articles and wrappers are fed over the support B the front end tucks will be placed in the wrapper and the end flaps will be folded across the ends of the wrapper and sealed in folded position by the operation of the heaters. At this stage in the operation the wrapper has been folded in the manner shown in Fig. 16.

The final feeding operation of the feeding members 135 discharges the article and wrapper in the form shown in Fig. 16 to the third support C which, as shown in Fig. 1, is disposed at right angles to the supports A and B. The support C has a side wall 150 which forms an abutment for the article and wrapper and engages the closed edge 151 of the wrapper. A top plate 148 is adjustably supported above the support C and can be vertically adjusted, as shown at 149 in Fig. 1. The free ends of the wrapper project laterally from the other edge of the article, as shown in Fig. 3.

The article and wrapper are fed along the support C by means of spaced feeding members 152 carried by an endless carrier 153 mounted on sprockets 154 and 155 carried by spindles 156 and 157. The spindle or shaft 156 is driven by a bevel gear connection 158, 159 to the shaft 53.

It has been found that the operation of the endless feeding members 153 and members or lugs 152 at high speed causing the lugs to engage against the sides of the article, tends to dent in the article and damage the package and for this reason the lugs 152 do not engage and feed the article and wrapper immediately after it has been deposited on the support C. They are, however, fed by a reciprocating feeding mechanism illustrated particularly in Fig. 5. In this figure there is shown an arm 190 having an angular head on the front end thereof consisting of an upper plate 191 adapted to engage over the top of the article and a rear plate 192 adapted to engage along the rear side of the article. The arm 190 is reciprocated back and forth on the support C and is so timed as to engage and feed the articles after they have been deposited on the support by the feeding members or lugs 135 or 180, hereinafter described. At its rear end the arm 190 is pivoted at 193 to the upper end of a lever 194 which is mounted on a fixed pivot 195 and is provided intermediate its ends with a roller 196 disposed in engagement with a cam 197 mounted on the shaft 156. A spring 198 engages the upper surface of the arm 190 and holds the front end of the arm or head in engagement with the table or support C.

From the showing in Fig. 5 it will be seen that as the shaft 156 and cam 197 rotate the lever 194 will be oscillated about its pivot 195 and will reciprocate the arm 190 and the feeding head formed on the front end thereof. A suitable spring, as shown, is provided to press the arm 194 to the left viewing Fig. 5 in order to maintain the roller 196 in engagement with the cam 197. The cam 197 is so designed that the initial movement of the article and wrapper along the support C will be relatively slow, but this movement becomes more rapid as the article is fed and at the limit of the feeding movement 190 the article and wrapper are moving at approximately the speed of movement of the lugs 135 or 180.

The first operation performed on the support C is to place the end tucks 160 and 161 in the wrap-

per at the rear ends of the wrapper. The end tuck 161 is placed therein by a stationary tucker 162 disposed above the support C at the side thereof opposite the wall 150. The advance end of the tucker 162 is bent outwardly, as shown at 163 in Fig. 10.

The end tucks 160 are formed by rotating tucker members 165 which are formed on a disk 166 mounted on a spindle 167 to which is secured a sprocket 168 driven by the chain 153. From the showing in Fig. 10 it will be noted that the tucker 165 forms the tuck 160 and moves within the end 163 of the stationary tucker 162. Thus, the tuck 160 is guided beneath the stationary tucker and held in position.

The free ends 140 and 145 of the wrapper are folded inwardly against the rear end of the article by the operation of slots 170 and 171 which operate in the same manner as the slots shown in Fig. 6. It will be noted that the upper end 145 is first folded downwardly and inwardly against the tucked ends and against the end of the article and the lower end 140 is then folded upwardly against the article and also against the folded end 145. The completed wrapper is shown in Fig. 18 from which, as above stated, it will be noted that the central portion of the end 140 extends slightly above the upper surface of the article forming a tab.

In Fig. 20 there is illustrated a slightly different form of feeding mechanism for feeding the articles and wrappers over the support B. In this embodiment of the invention the second feeding mechanism is mounted above the support B instead of below the support. This mechanism comprises a plurality of feeding members 180 which are carried by an endless carrier 181 mounted on sprockets 182 and 183. With the form of feed shown in Fig. 3 there is a slight pause between the discharge of the articles and wrappers from the section 31 of support A to the support B and the feeding movement of the articles and wrappers along the support B. However, with the form of feed shown in Fig. 20 there is no pause between these two feeding mechanisms and the feeding members 180 come into operation as soon as the feeding members 36 have finished their feeding operation. From the showing at the right hand end of Fig. 20 it will be noted that the upper flap 145 or upper free end of the wrapper snaps up as soon as the feeding member 180 has finished its feeding operation and moved upwardly away from the article and wrapper. The rotary tucker 165, moreover, insures the proper positioning of the upper flap 145 since the tucker bends the flap upwardly in case it has not already "snapped" up.

In the embodiment of the invention shown in Fig. 21, the upper conveyor 200 overlaps the delivery end of the lower conveyor 201. The conveyor 200 is driven at a faster rate than the conveyor 201, by any suitable driving connections and thus moves the article and wrapper away from the feeding member 202 on conveyor 201 and prevents member 202 from snapping the lower flap downwardly as the member 202 moves downwardly.

Members 202 may be formed as shown in Fig. 22 to engage the end of or rear edge of the article between the end edge portions of the wrapper.

From the foregoing description it will be evident that simple, practical and efficient wrapping mechanism has been provided and that the articles will be quickly or rapidly fed through the machine and wrapper by the folding and wrapping mechanism described. Furthermore, there is practically no interruption to the feed of the articles through the machine.

Although certain specific embodiments of the invention have been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. In a wrapping machine, a support, an endless carrier, a plurality of spaced feeding elements mounted on said carrier and movable successively over said support to feed articles to be wrapped, means for positioning wrapper blanks in the path of the articles fed along said support, a second support, folding means at the sides of said support, a second endless carrier and a plurality of spaced feeding elements mounted thereon and successively engageable with articles on the second support for feeding the articles and wrappers along said second support, said two carriers and feeding elements being so relatively arranged that the two sets of feeding elements will operate without interference with each other, the feeding elements on the second carrier having spaced portions, one portion being engageable with the rear edge of the article being fed and the other portion being disposed below said first portion, the lower end flap of the wrapper being disposed between said portions during the feeding movement.

2. In a wrapping machine, a support, endless means for feeding an article and wrapper along said support, a second support disposed in alinement with and spaced from the discharge end of the first support, folding means associated with the second support for folding the lateral ends of the wrapper across the sides of the article, an endless carrier, and feeding members mounted thereon and movable upwardly through the space between the supports and along the second support for feeding the articles and wrappers along the said support and in cooperative relation with said folding means.

3. In a wrapping machine, a support, endless means for feeding an article and wrapper along said support, a second support disposed in alinement with and spaced from the discharge end of the first support, folding means associated with the second support for folding the lateral ends of the wrapper across the sides of the article, an endless carrier, feeding members mounted thereon and movable upwardly through the space between the supports and along the second support for feeding the articles and wrappers along the said support and in cooperative relation with said folding means, a third support having the receiving end of its supporting surface spaced from and alined with the second support, the said feeding members being movable downwardly through the space between said second and third supports subsequent to the feeding operation thereof.

4. In a wrapping machine, a support, endless means for feeding an article and wrapper along said support, a second support disposed in alinement with and spaced from the discharge end of the first support, folding means associated with the second support for folding the lateral ends of the wrapper across the sides of the article, an endless carrier, feeding members mounted

thereon and movable upwardly through the space between the supports and along the second support for feeding the articles and wrappers along the said support and in cooperative relation with said folding means, a third support having the receiving end of its supporting surface spaced from and alined with the second support, the said feeding members operating to feed the articles and wrappers to the third support and being movable downwardly through the space between said second and third supports subsequent to the feeding operation thereof.

5. In a wrapping machine, means for feeding an article and wrapper, means for folding the lateral ends of the wrapper across the sides of the article with the free ends projecting beyond the rear end of the article, a support arranged to receive the article so wrapped, stationary tucking means associated with said support for tucking the wrapper at one edge thereof, and movable tucking means for tucking the other edge of the wrapper, said movable tucking means being movable within and in overlapping relation to the stationary tucking means.

6. In a wrapping machine, a support, endless means for feeding an article and wrapper along said support, a second support disposed in alinement with and spaced from the discharge end of the first support, folding means associated with the second support for folding the lateral ends of the wrapper across the sides of the article, an endless carrier, feeding members mounted thereon and movable upwardly through the space between the supports and along the second support for feeding the articles and wrappers along the said support and in cooperative relation with said folding means, a third support having the receiving end of its supporting surface spaced from and alined with the second support, the said feeding members being movable downwardly through the space between said second and third supports subsequent to the feeding operation thereof, said third support extending at right angles to said second support.

7. In a wrapping machine, means for feeding an article and wrapper, means for folding the lateral ends of the wrapper across the sides of the article with the free ends projecting beyond the rear end of the article, a support extending at right angles to the path of movement of said feeding means and arranged to receive the article so wrapped, stationary tucking means associated with said support for tucking the wrapper at one edge thereof, and movable tucking means for tucking the other edge of the wrapper, said movable tucking means being movable within and in overlapping relation to the stationary tucking means.

8. In a wrapping machine, a support, means for feeding articles to be wrapped along said support, means for feeding a paper sheet across the path of movement of the articles, means for severing the sheet to form wrapper blanks, driving means for said severing means, and means incorporated in said driving means for regulating the severing means to vary the point of operation thereof in the cycle of operation of the machine.

9. In a wrapping machine, a pair of spaced, alined, supports, endless feeding means associated with each support for feeding an article and wrapper along said supports, means associated with said supports for folding the wrapper around the article with the ends projecting rearwardly beyond the rear edge of the article, means associated with said supports for folding the lateral edges of the wrapper against the sides of the article, a third support disposed at right angles to the other supports and arranged to receive the article and wrapper from the second support, and means associated with said third support for folding the ends of the wrapper against the rear edge of the article.

10. In a wrapping machine, a pair of spaced, alined, supports, feeding means associated with each support for feeding an article and wrapper along said supports, means associated with said supports for folding the wrapper around the article with the ends projecting rearwardly beyond the rear edge of the article, means associated with said supports for folding the lateral edges of the wrapper against the sides of the article, a third support disposed at right angles to the other supports and arranged to receive the article and wrapper from the second support, means disposed along one side of said third support for folding the ends of the wrapper against the rear edge of the article, reciprocating feeding means on said third support for initiating the feeding movement of the article and wrapper thereon, and endless feeding means receiving the article and wrapper from the reciprocating feeding means and for feeding them along the support and into cooperative relation to said folding means.

11. In a wrapping machine, a support, means for feeding an article along said support, means for feeding a strip of paper across the path of movement of the article, means for severing the strip with a V-shaped cut, means for folding the severed blank around the article and for securing the point of the V-shaped end disposed at and projecting above the upper rear edge of the wrapped package.

12. In a wrapping machine, a support, feeding means comprising endless feeding members and spaced feeding elements engageable with the rear edges of the articles to feed the articles along the support, means for feeding a wrapper across the path of movement of the article, a second support for receiving the article and wrapper from the first support, means for feeding the articles along said second support, said last named feeding means including endless members and spaced feeding elements movable upwardly between said supports and between the advance ends of the first named endless feeding members, and tucking and folding means for tucking and folding the wrapper as the article and wrapper are fed along said second support.

13. A wrapping machine comprising a support, means for feeding articles to be wrapped along said support, means for feeding a sheet of paper across the path of movement of the article, means for severing the sheet to form a blank, means engageable with the wrapper for folding the wrapper downwardly on the top of the article as it is fed along said support, a second support arranged to receive the article and wrapper from the first support, feeding means engageable with the rear edge of the articles for feeding the articles along said second support, means for tucking the advance ends of the wrapper against the ends of the article, means for folding the ends of the wrapper across the ends of the article, a third support arranged to receive the article and wrapper from the second support, means for feeding the article and wrapper along said third support, rotating tuckers and stationary tuckers for tucking the rear ends of the wrapper against the rear edges of the article, and means for folding

the free ends of the wrapper against the rear edge of the article.

14. In a wrapping machine, a support having a slot therein, means for feeding articles along said support, a top wall above the support, means for feeding a strip of paper across the path of movement of the article, and severing means for said strip, driving means for said severing means, said driving means being so timed that the strip will be cut after the article has fed the unsevered strip across the advance end and top and bottom of the article and is properly positioned around the article.

15. In a wrapping machine, a support having a slot therein, means for feeding articles along said support, a top wall above the support, means for feeding a strip of paper across the path of movement of the article, and severing means for said strip, driving means for said severing means, said driving means being so timed that the strip will be cut after the article has fed the unsevered strip across the advance end and top and bottom of the article and is properly positioned around the article, the paper feed being slower than the article feed.

16. In a wrapping machine, a pair of spaced, alined supports, feeding means associated with each support for feeding an article and wrapper along said supports, means associated with said supports for folding the wrapper around the article with the ends projecting rearwardly beyond the rear edge of the article, means associated with said supports for folding the lateral edges of the wrapper against the sides of the article, a third support disposed at right angles to the other supports and arranged to receive the article and wrapper from the second support, means disposed along one side of said third support for folding the ends of the wrapper against the rear edge of the article, reciprocating feeding means on said third support for initiating the feeding movement of the article and wrapper thereon, means for operating said reciprocating feeding means at an increasing rate of speed during its feeding movement, and endless feeding means receiving the article and wrapper from the reciprocating feeding means and for feeding them along the support and into cooperative relation to said folding means.

17. In a wrapping machine, a pair of spaced, alined supports, feeding means associated with each support for feeding an article and wrapper along said supports, means associated with said supports for folding the wrapper around the article with the ends projecting rearwardly beyond the rear edge of the article, means associated with said supports for folding the lateral edges of the wrapper against the sides of the article, a third support disposed at right angles to the other supports and arranged to receive the article and wrapper from the second support, means disposed along one side of said third support for folding the ends of the wrapper against the rear edge of the article, reciprocating feeding means on said third support for initiating the feeding movement of the article and wrapper thereon, means for operating said reciprocating feeding means at an increasing rate of speed during its feeding movement, and endless feeding means receiving the article and wrapper from the reciprocating feeding means and for feeding them along the support and into cooperative relation to said folding means, the final rate of feeding movement of the reciprocating feeding means being substantially the same as the rate of movement of the endless folding means.

18. In a wrapping machine, means for feeding an article and wrapper, means for folding the lateral ends of the wrapper across the sides of the article with the free ends projecting beyond the rear end of the article, a support arranged to receive the article so wrapped, stationary tucking means associated with said support for tucking the wrapper at one edge thereof, and movable tucking means for tucking the other edge of the wrapper, said movable tucking means being movable beneath the upper end flap formed by the tucks to insure the positioning of said flap in alinement with the upper surface of the article and wrapper.

19. In a wrapping machine, a support, endless means for feeding an article and wrapper along said support, a second support disposed in alinement with the discharge end of the first support, folding means associated with the second support for folding the lateral ends of the wrapper across the sides of the article, an endless carrier, and feeding members mounted thereon and movable upwardly through an opening between the supports and along the second support for feeding the articles and wrappers along the said support and in cooperative relation with said folding means.

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