

Nov. 10, 1936.

W. HOPPE

2,060,501

BREAD WRAPPING MACHINE

Filed April 12, 1934

2 Sheets-Sheet 1

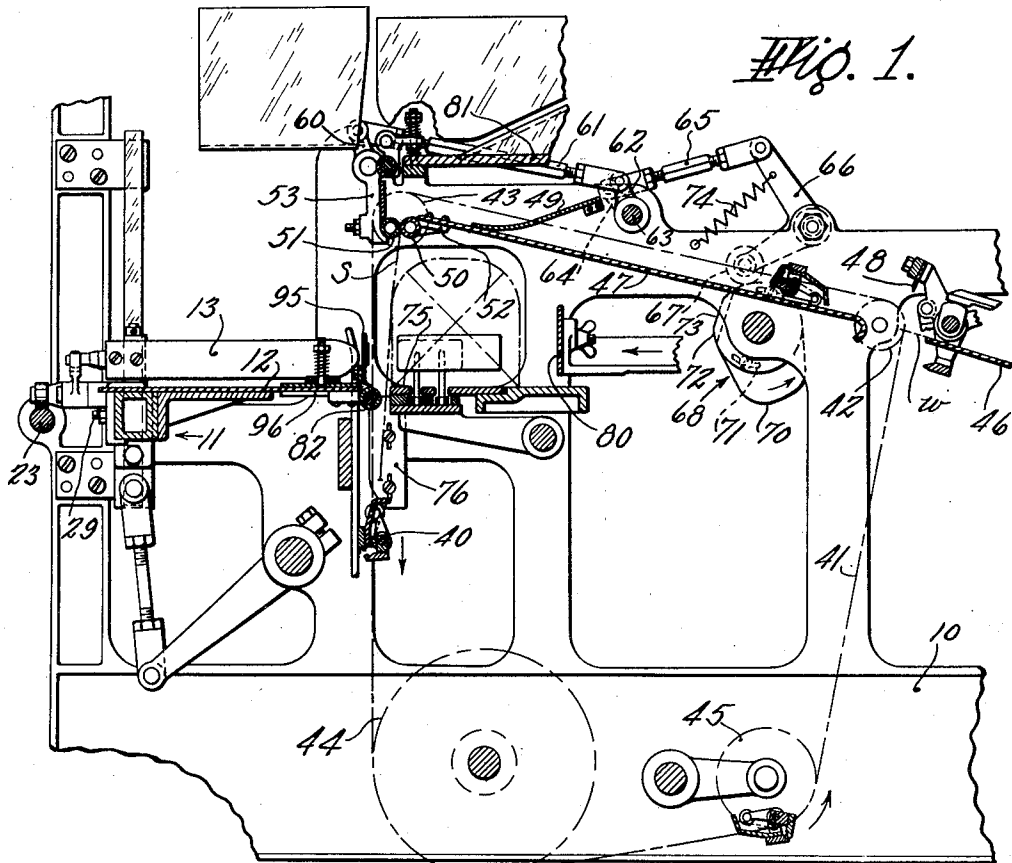


Fig. 2.

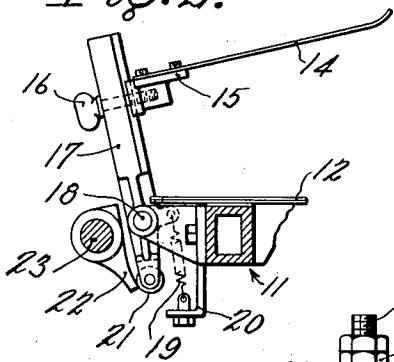


Fig. 5.

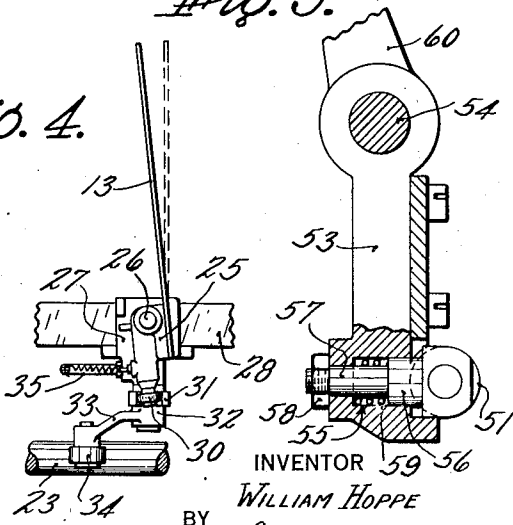


Fig. 4.

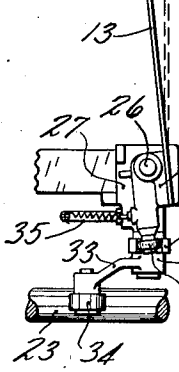
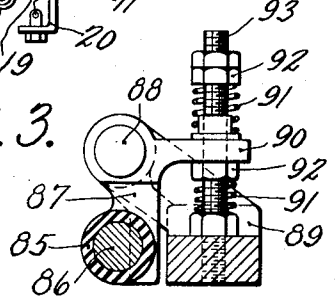


Fig. 3.



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2 Sheets-Sheet 2

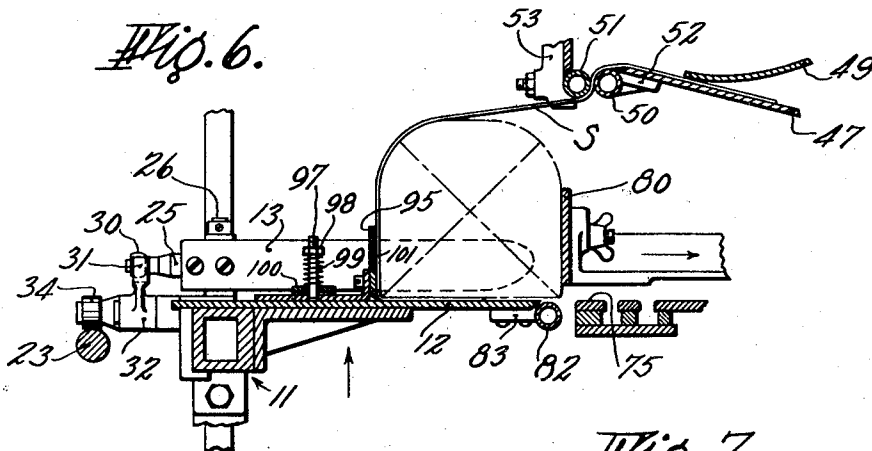
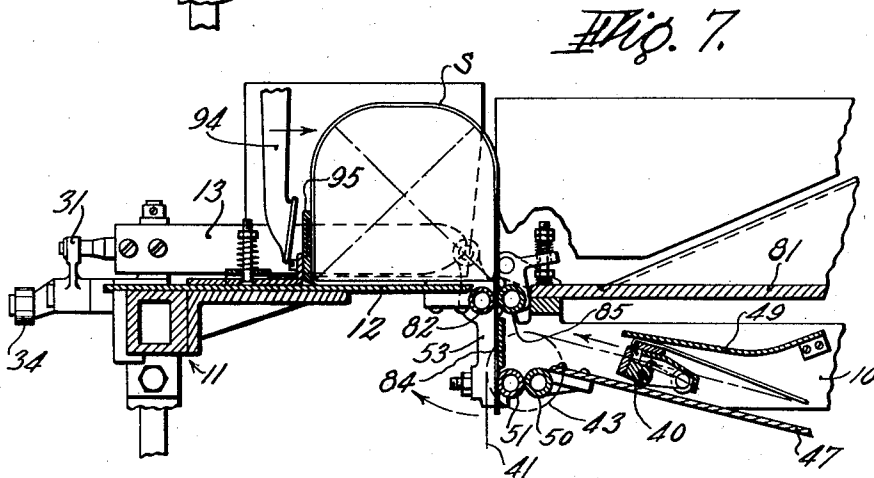
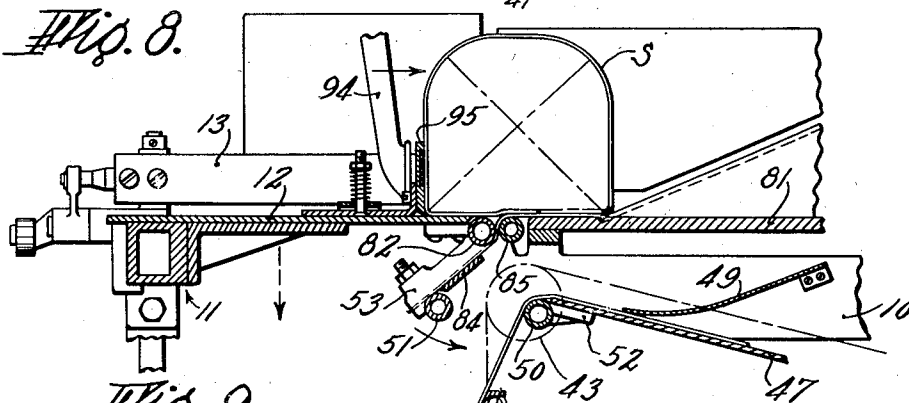
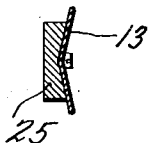


Fig. 9.



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2,060,501

BREAD WRAPPING MACHINE

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Application April 12, 1934, Serial No. 720,162

24 Claims. (Cl. 93—2)

This invention relates to methods and apparatus for wrapping articles, particularly irregularly shaped articles such as loaves of bread. In prior machines for wrapping articles of this character difficulty has been experienced in obtaining and preserving a smooth and even circumferential disposition of the wrapper about the article. Loaves of bread vary much in cross-section and contour, and are of considerable size when compared to most articles wrapped by machine. A wide sheet of paper is therefore required, which is hard to handle, particularly at high speeds. I have found that it is possible to improve upon the operation of prior wrapping machines by increasing the control exercised on the wrapper sheet throughout its initial positioning upon the article and the completion of its circumferential folding about the article.

One object of the invention is thus to hold and guide the wrapper during the wrapping operation in such a manner that the wrapper will be kept straight irrespective of irregularities in the contour of the loaves, so that the final end folds of the wrapper will be substantially uniform on successive loaves. A further object of the invention is to provide a method and an apparatus by which the wrapper will be preserved under control, so as to preserve its uniformity of tension and particularly its lateral alignment, until the circumferential wrapping of the article is substantially complete. Another object is to provide a mechanism operable in connection with a gripper adapted to grasp the leading end of the sheet and carry it into position for association with the article, by which the trailing end of the wrapper will be controlled and maintained in accurate lateral alignment until the circumferential wrapping of the article has progressed to such an extent that the lateral position of the wrapper is determined and controlled by that portion which is folded around the article.

Other objects of the invention have particular reference to the improvement of machines, such as that shown in the Smith and Hoppe Patent No. 1,953,195, April 3, 1934, in which the wrapper is delivered by a continuously moving gripper into position for association with an article. In the machine shown in the patent referred to the wrapper is carried by a continuously moving gripper between a loading platform and a carrier or elevator, the space between the platform and the elevator being closed by a bridge movable out of the way to permit the passage of the gripper. A further object of the invention is to permit the carrier being located in substantial contiguity

with the loading platform, thereby eliminating the movable bridge and increasing the accuracy of the wrap because of the lesser travel required of the article and wrapper before they are held firmly in associated relation by the folding members. The manner in which this result is accomplished can best be understood from a consideration of the mechanism shown in the accompanying drawings.

The present application is a continuation in part of my prior application Serial No. 644,067, filed November 23, 1932.

Referring to the drawings,

Fig. 1 is a longitudinal section of a wrapping machine constructed in accordance with the present invention, only so much of the machine being shown as will be necessary for an understanding of the present improvements, the remainder being in general similar to the Smith and Hoppe patent referred to;

Fig. 2 is a detail of a top holder for an article on the vertically moving carrier, omitted from Fig. 1 for purposes of clearness;

Fig. 3 is a detail of a flap tensioning roll;

Fig. 4 is a plan detail of one of the side tuckers;

Fig. 5 is a detail of one of the tensioning rolls for the trailing end of the wrapper;

Figs. 6 to 8 are diagrammatic views illustrating the operation of the mechanism; and

Fig. 9 is a detail cross-section through one of the side tuckers.

The mechanism is shown as supported in a frame 10. Mounted for vertical reciprocation in this frame is an elevator or carrier 11 which may be controlled by mechanism substantially similar to that shown in the Smith and Hoppe Patent 1,953,195, April 3, 1934. The elevator has a bottom loaf supporting plate 12 and opposed side tuckers 13, only one of which appears in the drawings. A top holding plate 14 (Fig. 2), made substantially narrower than the length of the loaf, is secured to a bracket 15 held by a thumb screw 16 upon an arm 17 pivoted to the elevator at 18. A spring 19 is fastened to the arm and to a bracket 20 on the carrier so as to urge the top holding plate yieldingly against the top of the loaf. The arm 17 also bears a roll 21 which, when the carrier is in its lowermost position (Figs. 1 and 2) bears against a cam 22 mounted upon a cross rod 23. By this mechanism the top plate 14 is raised above the article when the carrier is in its lowermost position and is brought by the tension of the spring into contact with the top of the article as soon as the car-

rier has moved upwardly sufficiently to release the roll 21 from the cam 22.

The side tuckers 13 are each secured to a bracket 25 (Figs. 4 and 6) pivoted at 26 to a slide 27, the slide being movable laterally on a cross member 28 of the carrier and being held in adjusted position by a bolt and slot connection 29 (Fig. 1). Each bracket 25 bears a roll 30 fitting in a fork 31 of a member 32 pivoted to the slide 27 and having an extending arm 33 bearing a roll 34. A spring 35 normally holds the side tucker in the dotted line position of Fig. 4, so that it is yieldingly held in contact with the side of the article except when the tucker is moved positively away from the article. This occurs by reason of the roll 34 striking the cross rod 23 when the carrier descends, the member 32 being rocked to the position shown in Fig. 4. It is preferred to make the tucker concave towards the article, as shown in Fig. 9, the form here being that of a broad V. This construction decreases the area of contact of the folder with the wrapper, and reduces the accumulation of wax on the folder where a waxed wrapper is used. It also increases very greatly the rigidity of the folder, a point of much importance where a long and slender folder is necessary, as shown in Fig. 6, to accommodate largely differing sizes of articles.

The wrapper blank *s* is drawn into position by one or more grippers indicated generically at 40 and carried by an endless continuously moving chain structure 41 passing around pulleys or sprockets 42, 43, 44, and 45. The construction and operation of this mechanism need not be given in detail, as it is similar, except in the points described fully below, to that shown in the Smith and Hoppe Patents 1,953,195 and 1,953,196, April 3, 1934. It will suffice to say that the gripper picks up the leading end of a web *w* extending beyond a support 46 as it is about to turn around the sprocket 42. As the gripper turns around the sprocket 42 it gives a very smooth acceleration to the formerly stationary web, although the gripper suffers no interruption in its continuous motion. The gripper then passes over a supporting plate 47, drawing out the web until the latter is severed by a cutting mechanism 48 and then continuing to carry the severed sheet by its leading edge. In its movement along the supporting plate the gripper passes underneath a wide flap 49 of leather or similar flexible material, which holds the trailing portion of the sheet against the supporting plate.

Besides this yielding flap 49 mechanism is provided to exert a controllable tension on the sheet as it is being carried into article engaging position by the gripper and as it is being draped around the article as the latter is advanced in the wrapping mechanism. In the present embodiment this mechanism comprises a pair of rolls 50 and 51 at least one of which, and preferably both, is provided with a yielding surface such as rubber. Roll 50 is mounted at its ends on brackets 52, which also support the forward end of the plate 47. Roll 51 is carried yieldingly, in a manner shown in Fig. 5, on swinging arms 53 mounted on pivots 54. Each arm 53 has a socket 55 formed in it, in which lies the shank 56 of a roll supporting member having a reduced portion 57 passing through the arm and secured in place as by a nut 58. A spring 59 is located within the socket around the reduced portion of the shank, giving a yielding mounting for the roll 51 which insures

that it will contact with roll 50 throughout its length with substantially uniform pressure.

Each arm 53 has a portion 60 extending beyond the pivot, to which is attached an adjustable link 61. Each of these links is coupled at its other end to an arm 62 on a cross shaft 63, having a second arm 64 connected by an adjustable link 65 to a bell crank 66. A roll 67 on this bell crank coacts with a cam assembly 68 suitably rotated so as to operate the arms 53 periodically. The cam assembly preferably comprises two parts adjustably coupled together but working as a unit when the machine operates. To swing the arms 53 to the position of Fig. 8 a cam 70 is provided, and to this is secured by a screw and slot connection 71 a generally cylindrical cam 72 having a flattened-off portion 73. The roll 67 is wide enough to contact both of these cam members, so that they act as a single cam having a flattened portion of variable angular timing.

As the gripper moves around the sprocket 43 the rolls 50 and 51 are separated as in Fig. 8. As soon as the gripper passes between the separated rolls the high part 70 of the cam 68 releases the roll 67 so that a spring 74, acting on the bell crank 66, can bring the rolls 50 and 51 yieldingly together as in Fig. 1. In this position the rolls exert a comparatively slight but steady drag upon the wrapper blank; the resistance to a direct pull being comparatively small on account of the fact that the rolls are freely rotatable, but the resistance to any sidewise movement of the wrapper blank being considerable as such movement would require the web to slip lengthwise of the rubber covered rolls. This is of considerable importance in the later operation of the machine, as will be described below.

As the gripper 40 continues to descend along the stretch of chain between the sprockets 43 and 44 it passes an article feeding station or platform 75 and reaches a tripping cam 76 which causes the gripper to open and release the wrapper blank in proper registration with the article. The normal resistance of the rolls to turning, which is increased by the compression of their resilient surfaces by the springs 74 and 59, may be sufficient to hold the wrapper definitely in this position. It is, however, preferable to provide a more positive grip for the blank at this point, and for this purpose the action of the flattened portion 73 of cam 68 may be made use of. When this flattened portion passes the roll 67 the full force of spring 74 is permitted to act on the rolls 50, 51 whereas normally a part of the force of the spring is taken up by the cam. A braking action is thus given to the rotation of the rolls serving to lock them in position and to determine a definite limit to the motion of the gripper. By this means any tendency to overrun is avoided, whether this be due to the inertia of the parts or to any disinclination of the wrapper to disengage itself from the gripper.

The present mechanism differs from that shown in the Smith and Hoppe patents in one important particular. The apparatus shown in those patents had a space between the article feed station 75 and the adjacent side of the carrier through which the gripper could pass, and which was closed after the passage of the gripper by a movable bridge plate in order to give support to the article. In the present case it will be observed that no substantial gap exists between the article feeding station and the car-

rier, and that the gripper moves downwardly directly under the forward edge of the carrier. The timing of the parts is made such that the gripper passes under the carrier while the latter is elevated (Figs. 7 and 8) and is followed down in its descent by the carrier. Roll 51 is swung underneath the carrier to permit the passage of the gripper, but returns to its original position in time to avoid interference as the carrier moves down. This action not only avoids the necessity for the bridge plate and its operating mechanism, but shortens the total travel of the article from the supply station onto the carrier, making for smoother operation and higher speed.

As stated above, the wrapper is left by the gripper hanging between the feeding station 75 and the carrier, with its upper end held by the rolls 50 and 51. It will be understood that any additional roll pressure given by reason of the flattened portion 73 is merely momentary, sufficient only to prevent overtravel, and that the cam 72 quickly retains control of the action of the spring 74 so that the rolls 50, 51 will guide the sheet and will exert a slight tensioning drag on it. With the wrapper thus positioned an article *a* is forced by a reciprocating pusher 80 onto the carrier 11. The lower end of the wrapper is turned under the article by the bottom plate 12 and the wrapper is drawn across the top of the article as shown in Fig. 6. At the same time the tucking plates 13 operate to form end tucks and thus to give an initial positive hold to the leading end of the wrapper. As the carrier rises the top plate 14 is brought down upon the top of the article, preferably contacting with its central portion only so that the ends of the wrapper are left free. During further upward movement of the carrier the wrapper is drawn down the fourth side of the article. As the wrapper is thus progressively assembled with the article it is held at all times by the rolls 50 and 51, which permit relatively free drawing out of the wrapper while preventing any lateral movement. Any desired tension can be had by adjusting the links 61, 65, and any desired temporary increases in tension may be obtained by a suitable change in the form of cam 68. The lateral holding of the wrapper by the rolls is particularly important in the case where loaves of bread are to be wrapped. These articles are seldom of uniform contour, and if the wrapper blank were drawn out solely in accordance with the pull of the loaf upon it the blank might be twisted relative to the loaf, making the final end folds irregular. By the use of the rolls 50, 51 the wrapper is always delivered to the article in correct alignment and under the desired tension.

It will be observed from a comparison of Figs. 1 and 6 that the article in being moved onto the carrier passes closely adjacent the rolls 50 and 51, so that the wrapper is guided across the top of the article without any slack being formed and without and chance of side slip. The article then is moved by the carrier in a second direction, approximately at right angles to the first, and is carried again past and closely adjacent to the rolls 50 and 51 as will be clear from a comparison of Figs. 6 and 7. During this travel the laying of the wrapper across the top is completed and the wrapper is brought down the vertical side of the article. Due to the position of the rolls closely adjacent the top of the article as the latter passes into the carrier the wrapper will be held substantially horizontally as shown

in Fig. 6, and as the article ascends the wrapper will be turned about the corner of the article adjacent the rolls without any slack being formed and without allowing the rolls to lose control of the wrapper. This is of great importance especially when irregular articles such as loaves of bread are being wrapped, since unless the control of the wrapper is adequately maintained a lateral displacement of the wrapper is practically certain to occur.

As the carrier reaches its uppermost position in a line with the folding chute or delivery table 81, the rolls 50 and 51 relinquish their hold on the wrapper either by reason of the wrapper being pulled completely out from between them or due to their separation by the cam 68. An additional safeguard against twisting of the wrapper, and an additional control of the tension of the wrap, is preferably employed, so that control of the blank is maintained after the rolls 50 and 51 have ceased to be operative. For this purpose a roll 82, preferably having a length considerably less than the length of the loaf where bread is being wrapped, is journaled in brackets 83 carried by the carrier 11. This roll presses the wrapper against a plate 84, carried by arms 53, as the carrier ascends, and when the carrier is in alignment with the delivery channel, presses the flap against a rubber covered roll 85. The latter roll is carried on a shaft 86 extending between arms 87 journaled at 88 on brackets 89 secured to the frame adjacent to the entrance to the delivery channel. Each arm has a lug 90 held in a central position by springs 91 secured by nuts 92 on a stud 93. The contact of rolls 82 and 85 exerts a drag on the central portion of the wrapper flap which prevents it from being shifted laterally by any irregularities in the contour of the loaf. The article is finally pushed out of the carrier, a cross roll 85, and onto the delivery table by a pusher 94 which may if desired be operated in the manner shown in the Smith and Hoppe patent.

In order to maintain the tightness of the wrap at all times, especially when a wrapping material such as "Cellophane" is used, the article is preferably controlled while on the carrier or elevator 11 by a backing plunger 95 having certain novel characteristics. The plunger is suitably mounted for reciprocating movement on the plate 12, as by forming its edges with portions 96 (Fig. 1) overlapping the plate to form guides. One or more plungers 97 (Fig. 6) are carried by the plunger, and have an adjustable nut 98 serving as a backing for a spring 99 which bears on a bridge plate 100. This plate is bent downwardly at its ends through slots in the plunger, being pressed by the spring 99 yieldingly against the plate 12. By this means the backing plunger is given a controllable resistance to sliding as the article is forced onto the elevator, insuring that a sufficient pressure will be exerted by the plunger on the article to keep the wrap tight. Where "Cellophane" is used as a wrapping material it is preferable to provide an insert 101 of sponge rubber in the backing plunger to prevent slipping.

I claim:

1. A wrapping machine comprising a gripper continuously movable through an endless path and adapted to carry a wrapper blank by engagement with its leading edge, a yielding surfaced normally freely rotatable roll spring mounted at one side of the gripper path, a second yielding surfaced normally freely rotatable roll movably mounted at the opposite side of the grip-

per path, means for pressing the second roll into contact with the first after the passage of the gripper to guide the trailing portion of the wrapper blank and maintain an equality of feed
5 between its two edges, means for opening the gripper to release the wrapper blank, and means for folding the wrapper blank around the article while its trailing end is still held by the rolls.

2. A wrapping machine comprising a gripper continuously movable through an endless path and adapted to carry a wrapper blank by engagement with its leading edge, a yielding surfaced normally freely rotatable roll spring mounted at one side of the gripper path, a second
10 yielding surfaced normally freely rotatable roll movably mounted at the opposite side of the gripper path, means for pressing the second roll into contact with the first after the passage of the gripper to guide the trailing portion of the wrapper blank and maintain an equality of feed between its two edges, means for opening the gripper to release the wrapper blank, an abutment positioned adjacent the first roll, and means for increasing temporarily the pressure of the second
15 roll against the first during the opening of the gripper to shift the first roll against the abutment and thus lock the rolls against rotation.

3. A wrapping machine comprising a gripper movable to forward a wrapper blank by engagement with its leading edge, a pair of normally freely rotatable rolls separable to allow the gripper to pass between them, means for pressing the rolls together after the passage of the gripper to guide the trailing portion of the wrapper blank and maintain an equality of feed between its two edges, means for opening the gripper to release the wrapper blank, and means for folding the wrapper blank circumferentially around the article while its trailing end is still held by
20 the rolls.

4. A wrapping machine comprising a gripper continuously moving through an endless path and adapted to carry a wrapper blank by engagement with its leading edge, a pair of normally freely rotatable rolls separable to allow the gripper to pass between them, means for pressing the rolls together after the passage of the gripper to guide the trailing portion of the wrapper blank and maintain an equality of feed between its two edges, means for opening the gripper to release the wrapper blank, means for temporarily locking the rolls against rotation during the opening of the grippers, and means for folding the wrapper blank circumferentially around the article while its trailing end is still held by
25 the rolls.

5. A wrapping machine comprising a reciprocating carrier having a fixed bottom, two end tuckers, and a movable top holder, means for pressing an article and a wrapper into the carrier to fold the wrapper upon the bottom and one side of the article, form end tucks therein, and draw the wrapper at least partially across the article top while the top holder is out of contact therewith, and means for causing said top holder to press the wrapper against the top of the article only after the wrapper has been so drawn across it.

6. A wrapping machine for loaves of bread and the like comprising a vertically reciprocating carrier having a loaf supporting bottom, end tuckers, and a movable top holder narrow in width as compared with the length of the loaf, means including a pair of rolls with their axes extending parallel to the direction of the length of the
30 loaf for supporting a wrapper blank adjacent the carrier, a pusher for placing a loaf and a portion of the so supported wrapper upon the carrier to fold the wrapper upon the bottom and one side of the loaf and to cause the tuckers to form end tucks in the wrapper, means for maintaining the rolls pressed together upon the wrapper blank to maintain an equality of feed between the two edges of the blank, means for moving the carrier to draw the suspended portion of the wrapper blank across the top of the loaf and down the fourth side thereof, means for pressing the top holder upon the central portion of the top of the loaf after the wrapper has been laid thereon, means for tensioning the central portion of the trailing end of the wrapper blank to draw it evenly across the fourth side, and means for moving the article from the carrier while the central portion of the trailing end of the wrapper blank is so held to overlap said trailing end upon the opposite end of the wrapper blank.

7. A method of wrapping irregular articles such as loaves of bread which comprises applying a wrapper blank to two adjacent sides of the article and substantially simultaneously therewith forming end tucks while holding the unapplied portion of the blank against lateral displacement, applying the central portion only of the blank to the third side of the article leaving the side portions of the blank free to adjust themselves to the article and while holding the unapplied portion of the blank against lateral displacement, drawing the wrapper blank around the fourth side of the article by a pull directed substantially centrally thereof and while holding the unapplied portion of the blank against lateral displacement, folding the trailing end of the blank into overlapping relation with the portion of the blank first applied to the article, and folding the projecting end portions of the wrapper against the ends of the article.

8. A wrapping machine comprising means for folding a wrapper around an article to be wrapped, mechanism including a traveling gripper for locating a sheet of wrapping material in position for delivery together with the article into said means, a pair of rolls, and means for separating the rolls to permit passage of the gripper and for closing them together to guide and support the sheet.

9. A wrapping machine comprising means for folding a wrapper around an article to be wrapped, mechanism including a traveling gripper for locating a sheet of wrapping material in position for delivery together with the article into said means, a pair of rolls, means for separating the rolls to permit passage of the gripper, and yielding means for closing the rolls together to guide and support the sheet during its association with the article.

10. A wrapping machine comprising means for folding a wrapper around an article to be wrapped, mechanism including a traveling gripper for locating a sheet of wrapping material in position for delivery together with the article into said means, a pair of rolls at least one of which has a yielding surface, and means for separating the rolls to permit passage of the gripper, and for closing them together to guide and support the sheet.

11. In a wrapping machine of the type having a carrier movable back and forth between an article receiving to an article delivering position, a backing plunger on the elevator, and a sponge rubber pad carried by the backing plunger to

75 ing parallel to the direction of the length of the

prevent slippage of the wrapping material relative to the article as the article is received by the carrier.

12. In a wrapping machine of the type having a carrier movable from an article receiving to an article delivering position and having side tuckers thereon positioned to make side tucks in the wrapper as the article is received between them, mechanism for separating the folders as the article moves between them comprising a pair of slides mounted on the carrier and on which the tuckers are pivoted, a bell crank carried by each slide and engaging the corresponding tucker to turn it on its pivot, means for holding the slides in different positions of separation, and a stationary abutment against which the bell cranks strike in any position of adjustment of the slides to rock the bell cranks and through them to turn the folders on their pivots.

13. A wrapping machine comprising an article loading platform, an article delivery platform, a carrier movable between the platforms with its article receiving surface forming a substantially contiguous continuation of said loading platform when in alignment therewith, a sheet carrying gripper, and means for moving said gripper in a path overlapping the path of the carrier in a region adjacent the loading platform, the carrier and gripper being so timed in their relative movements as to permit passage of the gripper past the loading platform while the carrier is spaced therefrom, whereby the wrapper sheet may be carried positively by its leading edge to a position in which it extends between the substantially contiguous edges of the carrier and the loading platform when the carrier is in article receiving position.

14. A wrapping machine comprising an article loading platform, an article delivery platform, and a carrier movable between the platforms with its article receiving surface forming a substantially contiguous continuation of said platforms when in alignment therewith, a sheet carrying gripper, means for moving the gripper in an endless path intersecting the path of the carrier, the gripper and carrier being so timed in their movement that the gripper passes into the path of the carrier when the latter is aligned with the article delivery platform, moves ahead of the carrier when the latter is moving from the article delivery to the article loading platform, and completes the remainder of its circuit outside of the path of the carrier, and means for supplying wrapping material to and releasing it from the gripper, whereby the wrapping material may be deposited by the gripper between the closely spaced carrier and article loading platform.

15. A wrapping machine comprising an article loading platform, an article delivering platform, a carrier movable between the platforms with its article receiving surface forming a substantially contiguous continuation of said loading platform when in alignment therewith, a sheet carrying gripper, means for moving said gripper in a path overlapping the path of the carrier in a region adjacent the loading platform, the carrier and gripper being so timed in their relative movements as to permit passage of the gripper past the loading platform while the carrier is spaced therefrom, whereby the wrapper sheet may be carried positively by its leading edge to a position where it extends between the substantially contiguous edges of the carrier and the loading platform when the carrier is in article receiving position, a pair of rolls positioned in the region be-

tween the loading and delivery platforms, and mechanism for separating the rolls to permit the passage of the gripper between them and for bringing them together subsequently to grasp the trailing portion of the wrapper sheet.

16. A wrapping machine comprising an article loading platform, an article delivery platform, and a carrier movable between the platform with its article receiving surface forming a substantially contiguous continuation of said platforms when in alignment therewith, a sheet carrying gripper, means for moving the gripper in an endless path intersecting the path of the carrier, the grippers and carrier being so timed in their movement that the gripper passes into the path of the carrier when the latter is aligned with the article delivery platform, moves ahead of the carrier when the latter is moving from the article delivery to the article loading platform, and completes the remainder of its circuit outside of the path of the carrier, means for supplying wrapping material to and releasing it from the gripper, whereby the wrapping material may be carried by the gripper between the closely spaced carrier and the article loading platform, a pair of separable wrapper holding clamps located above the article loading platform, and means to separate said clamps to permit the passage of the gripper between them and to close them to grasp the trailing end of the wrapper and hold it in article engaging position when released by the gripper.

17. A wrapping machine comprising means for partially wrapping an article, opposed end tuckers each formed as a plate-like member of V-shaped cross-section concave toward the article and making contact with the wrapper adjacent the edges of the folder only, and means for causing relative movement between the article and the folders.

18. A wrapping machine folder in the form of an elongated plate concave in cross-section toward the article and positioned to make contact with the wrapper along the lateral edges of the folder only, whereby the folder is stiffened and the area of contact with the wrapper is reduced.

19. A wrapping machine of the type having a carrier movable between an article receiving station and an article delivering station, a flap engaging roll on the carrier, a plate adjacent the path of motion of the carrier against which the roll may press a trailing wrapper flap, and a roll adjacent the delivering station against which the first named roll holds the flap during the delivery of the article.

20. A wrapping machine having members engaging opposite sides of a wrapper sheet at an intermediate point thereof, and offering a greater resistance to slantwise motion of the wrapper than to straight motion thereof, means for engaging a portion of the wrapper with the article, and mechanism for moving the article in a path extending in two directions past said members to draw out the wrapper between them, the portion of the path in the first direction extending sufficiently close to the members to avoid any substantial formation of slack during the motion of the article in that portion of the path in the second direction.

21. A wrapping machine having means to clamp to one face of an article the leading end of a wrapper, a device including a roll rotatable upon an axis transverse to the wrapper for engaging opposite sides of the wrapper, and mechanism for moving the article partially around said device and closely adjacent thereto throughout said

movement to draw the wrapper through said device and lay it upon the article.

22. In a wrapping machine of the type having spaced feeding-in and delivery stations, an article carrier movable between the stations, means for locating a wrapper across the article receiving side of the carrier, a pusher movable to carry the article and the wrapper into the carrier while the carrier is adjacent the feeding-in station, and means for ejecting the article and wrapper from the carrier when the carrier is adjacent the delivery station, said elements cooperating to draw the wrapper completely around the article; that construction of wrapper locating means including a wrapper gripping device offering a greater resistance to slantwise motion of the wrapper than to straight motion thereof and located between the feeding-in and the delivery stations sufficiently close to the path of the article as it enters the carrier to avoid any substantial formation of slack in the wrapper as the carrier moves towards the delivery station.

23. In a wrapping machine of the type having spaced feeding-in and delivery stations, an article carrier movable between the stations, means for locating a wrapper across the article receiving side of the carrier, a pusher movable to carry the article and the wrapper into the carrier while the carrier is adjacent the feeding-in station, and means for ejecting the article and wrapper from the carrier when the carrier is adjacent the deliv-

ery station, said elements cooperating to draw the wrapper completely around the article; that construction of wrapper locating means including a pair of rolls and means for supporting the rolls in yielding contact with opposite sides of the wrapper and for free rotation as the wrapper is pulled through them by the motion of the article, said rolls being located between the feeding-in and the delivery stations sufficiently close to the path of the article as it enters the carrier to avoid any substantial formation of slack in the wrapper as the carrier moves towards the delivery station and serving to maintain an equality of feed between the two edges of the wrapper irrespective of irregularities in the contour of the article.

24. A wrapping machine having members engaging opposite sides of a wrapper sheet at an intermediate point thereof, and offering a greater resistance to slantwise motion of the wrapper than to straight motion thereof, means for engaging a portion of the wrapper with the article, and mechanism for moving the article around the members in an angular path to draw the wrapper through the members and to lay the portion so drawn out upon at least two sides of the article, the wrapper engaging members being positioned within the angle of the path closely adjacent its apex, and at a substantially equal distance from each leg thereof.

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