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2,235,503

WRAPPING MACHINE

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3 Sheets-Sheet 1

Fig. 2.

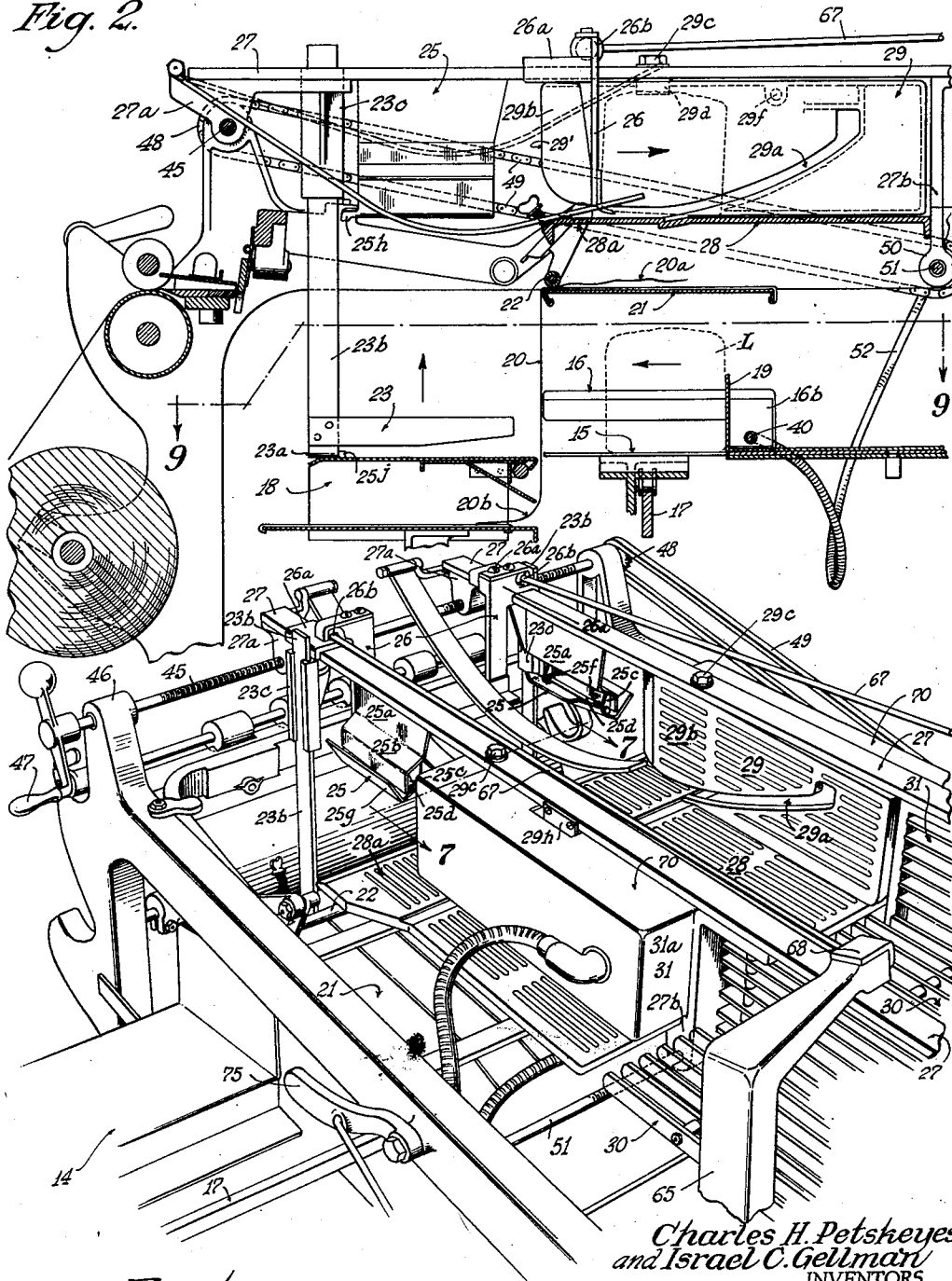


Fig. 1.

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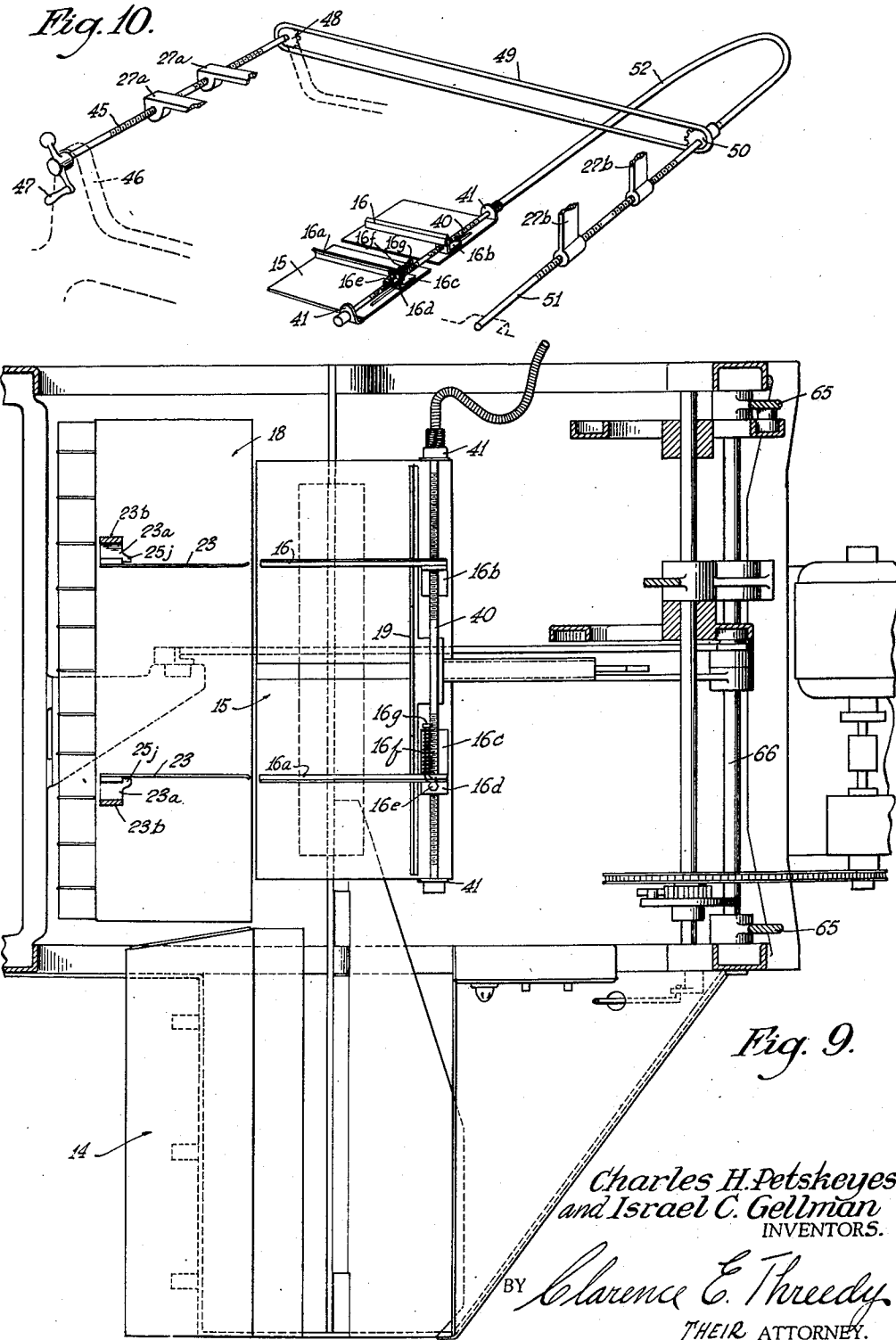
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UNITED STATES PATENT OFFICE

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WRAPPING MACHINE

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23 Claims. (Cl. 93—2)

This invention relates to improvements in wrapping machinery, and has as one of its principal objects a novel arrangement and construction of wrapping instrumentalities including adjustable article-holding means and a unitary control for adjusting the various article holding devices simultaneously to accommodate articles of different length.

Another object is an improved end-fold mechanism arranged for adjustable cooperation with the other adjustable wrapping instrumentalities.

Another object is a terminal folding and sealing structure arranged for adjustable cooperation with the other wrapping instrumentalities.

Other objects and novel aspects of the invention relate to various details of construction, arrangement and mode of operation of parts of the preferred embodiment described hereinafter in view of the annexed drawings, in which:

Fig. 1 is a fragmentary top perspective view of the wrapping machine;

Fig. 2 is a fragmentary vertical section lengthwise through the wrapping machine shown in Fig. 1;

Fig. 3 is an end view of an article being initially wrapped by transfer onto an elevator;

Figs. 4 and 5 are sectional views of one of the end fold mechanisms in relatively progressive folding movements as the article is raised into engagement therewith by the elevator;

Fig. 6 is an endwise perspective of one end fold mechanism and the releasing means therefor;

Fig. 6—A is a modification of the mechanism of Fig. 6;

Fig. 7 is a vertical section through one of the terminal fold plates through its pivotal mounting along line 7—7 of Fig. 1;

Fig. 8 is an outside perspective of one of the improved terminal fold plates;

Fig. 9 is a horizontal section looking down on the loading table along line 9—9 of Fig. 2; while

Fig. 10 is a schematic layout of the adjustable control means.

The preferred embodiment is first described in terms of its general operation with particular reference to Fig. 2.

An object to be wrapped, such as the loaf of bread L, is initially deposited upon a loading table 15 between adjustable holding arms 16 (see Fig. 9 also) opposite its ends. The loading table is reciprocated on a track bar 17 in timed cooperation with the movements of other wrapping mechanisms including a vertically re-

ciprocable wrapping carrier or elevator 18, so that when the elevator is in lowered position as seen in Fig. 2, the loading table 15 will be aligned alongside the elevator.

The loaf L is pushed off of the loading table 5 by a pusher 19 into a sheet of wrapping paper 20 which hangs from its upper end 20a on a holding table 21, whereon said upper end is clamped by an automatic holding bail 22 which coacts with the elevator and paper feeding means 10 to position a sheet of wrapping paper on the holding table at the beginning of each wrapping cycle. Thus, the paper and loaf are pressed in between a pair of adjustable end fold arms 15 23 (see Fig. 9 also) which causes the lower end portion 20b of the wrapper to slide up beneath the bottom of the loaf while other portions of the wrapper are folded partly over the opposite ends of the loaf by arms 23, still other (upper) portions of the wrapper being partly folded over 20 the top of the loaf (see Fig. 3).

Thereafter, upward movement of the elevator causes the remaining upper portions of the wrapper sheet to be folded the rest of the way around the top and over the adjoining side of the loaf 25 (since the uppermost end portions of the wrapper are substantially fixed). As the elevator moves into fully raised position, the loaf is raised toward (Fig. 4) and forced between (Fig. 5) end fold rockers 25, which are clearly seen in Fig. 30 1, to effect additional end folds in a manner hereinafter described in detail. When the elevator has come to rest in fully raised position, a pair of transfer fingers 26 slide forward on rails 27 and push the loaf onto a heated sealing table 28 between special heated terminal fold plates 29. Succeeding loaves urge the preceding loaves on through the terminal fold plates onto a discharge table 30.

In order that the machine may accommodate 40 articles or loaves of different length, the invention provides for adjusting movement of the holding arms 16 on the loading table, the initial end fold arms 23 on the elevator, the transfer fingers 26 at the upper station of the elevator, 45 the terminal fold plates 29, and also the opposite guide rails 31 (Fig. 1) over the discharge table. Moreover, the invention further provides a unitary control means (see the perspective layout of Fig. 10) for simultaneously adjusting the 50 foregoing instrumentalities.

Beginning with the loading table, one of the holding arms 16 is mounted on an angle bracket 16b which is threaded onto a reversely threaded shaft 40 journaled as at 41 on the top of the 55

loading table, the bracket having guided sliding movement on the table top toward and away from the companion arm 16a responsive to rotative movement of the shaft 40. The companion arm 16a has a mounting bracket 16c also threaded on the shaft 40, and is attached to a smaller angle 16d which is pivoted as at 16e on bracket 16c so that the one arm 16a may swing toward and away from the companion arm 16. A spring 16f is mounted on a pintle 16g which extends freely through the riding bracket and is secured on the smaller pivot angle so that the pivoted arm is urged into a normal position parallel with its companion arm. Should a loaf be improperly placed between the holding arms 16 and 16a, the latter may yield. Means for rotating the threaded spindle 40 will be described hereinafter.

The initial end-fold arms 23 (Fig. 9) are disposed in alignment with the arms 16, but move up and down with the elevator. To this end each of these arms 23 is secured at one end to a laterally projected offset 23a (Figs. 6 and 9) formed at the respective lower ends of vertically reciprocable slide bars 23b each slidably mounted in sleeve castings 23c secured beneath one end portion of the rails 27. The offsets 23a of the vertically reciprocable slide bars rest on the top of the elevator 18 (Figs. 2 and 9) and rise and fall with the latter.

Adjustment of the initial end fold means or arms 23 is effected as a result of the adjustable mounting of the rails 27 to which the sleeves 23c are attached. Referring to Figs. 1 and 2, one end of each of the rails 27 has a depending boss or block 27a which (Fig. 10 also) is threaded on a reversely threaded main adjusting shaft 45 journaled in bosses 46 at opposite sides of the machine frame. One end of this shaft is provided with a manually operated adjusting crank 47, while the opposite end of the adjusting shaft is provided with a sprocket 48 drivingly connected by a sprocket chain 49 with a sprocket 50 on an auxiliary or second reversely threaded cross shaft 51 (see Fig. 10). The remaining support for the adjustable rails 27 is provided by depending arms 27b which threadably engage respectively reversed threading on the second cross shaft 51.

Turning of handle 47 effects corresponding turning of the reversely threaded shafts 45 and 51 with a consequent movement of the rail supporting blocks 27a and 27b toward or away from each other. Thus, the rails 27 may be moved toward or away from each other, and since the sleeves 23c, which mount the initial end-fold slide bars 23b, are attached to the rails 27, the end-fold arms 23 are likewise moved toward and away from each other on the elevator to accommodate loaves of different length.

The holding arms 16 on the loading table are arranged to be adjustably moved correspondingly and simultaneously with the end fold arms 23 by means of a driving connection between the second or auxiliary cross shaft 51 and the threaded spindle 40 on the loading table. This driving connection includes a flexible shaft drivingly interconnecting the spindle 40 and shaft 51 and working in a flexible cable 52 so that the loading table is free to move notwithstanding its driving connection with the auxiliary shaft 51. It may be observed here that the end fold rockers 25, as well as the terminal fold plates 29 and the discharge guide bars 31, are

also mounted on rails 27, and hence are likewise moved whenever the handle 47 is turned.

After the initial end folds are made by pushing the loaf and wrapper in between the arms 23 on the elevator, additional or intermediate end folds are effected by raising the partly wrapped loaf in between the intermediate end-fold rockers 25 when the elevator is raised.

Referring to Figs. 1 and 6, this intermediate end-fold means includes a pair of opposite mounting plates 25a each depending from one of the rails 27 at positions corresponding to the ends of a loaf on the elevator when the latter is raised. The lower part of each mounting plate is offset outwardly, as at 25b, and provided on the inner side with spaced ears 25c (Figs. 1, 4, 6) between which a pintle 25d is mounted to extend through ears 25e on the fold plate 25, so that the latter are disposed for rocking movement toward and away from the opposite ends of the object or loaf, springs 25f (Figs. 1 and 5) normally urging their respective rocking plates in a direction toward each other for engagement with a loaf, as illustrated in Fig. 4. The offsets 25b provide a sort of recess into which the fold plates may pivot as the loaf moves into fully raised position.

In operation, the end fold rockers 25 are normally positioned as seen in Figs. 1 and 4, and the loaf or other object L is partly wrapped by transfer from the loading table onto the elevator, in the manner heretofore described (this phase of the wrapping being illustrated in Fig. 3). As the elevator rises toward the end fold rockers 25, two end or tail folds 60 and 61 project as seen in Fig. 4. The top end fold 60 is urged against the rocker 25 and the latter tilts toward upright position as viewed in Figs. 5 and 6 until the top end fold is firmly pressed down against the end of the loaf (and incidentally against the initial fold arms 23 which are meanwhile holding the loaf on the elevator). The bottom end fold 61 lies on the top of the elevator, and the end fold rocker plate 25 is provided with an angled extension 25g which rocks down snugly against the bottom fold 61 and flattens the same.

The loaf is somewhat firmly held between the arms 23 and the rocker plates 25, and to assure smooth positive movement of the loaf off the elevator by the transfer fingers 26, means is provided for automatically releasing the tension of the rocker fold plates on the loaf. To this end, each of the rocker plates 25 is provided with an arm 25h (Fig. 6) which extends into the path of upward movement of a projection 25j on the laterally extending part or arm 23a of each of the vertically reciprocable slide bars 23. Thus, when the slide bars are moved into fully raised position by the elevator on which they rest, the projections 25j thereon will respectively engage the arms 25h on each rocker plate and tilt the same away from the ends of the loaf into the recessed or offset parts of their respective mounting plates, thus relieving pressure on the ends of the loaf.

In Fig. 6—A there is shown a modified arrangement of the mechanism of Fig. 6 wherein the rocking leverage is made adjustable by the provision of a rocking arm 25K pivoted as at 25L on the back of the plates 25a. The rocker has a nose portion 25M which projects into the path of the bracket 23a carried by the elevator, so that as the latter bracket is raised by movement of the elevator toward fully raised position,

the opposite end 28N of the rocker arm is moved downwardly toward the extension 25g on the folding rocker or plate. An adjustable driving engagement is afforded between the rocker and folding plate by the provision of a tappet screw 25P which is threaded into a suitable boss at the end 28N of the operating rocker and which may be adjusted to engage the extension 25g to effect the final or additional rocking of the rocker fold plate in selectively timed relationship to the movement of the elevator into fully raised position.

At this juncture in the wrapping operation, the transfer fingers are moved forward, from the position seen in Fig. 1, against the loaf to move the same in between the upright terminal fold plates 29, such movement of the fingers being effected through the properly timed movement (toward the right, Fig. 1) of a pair of crank levers 65 (only one seen in Fig. 1) which are mounted for oscillation on a secondary drive shaft 66 (Fig. 9) at the end of the machine opposite the transfer fingers.

A feature of importance is the driving connection between the crank levers 65 and the transfer fingers. These transfer fingers 26 each depend from blocks 26a which slide on rails 27, and each block has a ball and socket or analogous swivel connection 26b with one end of a connecting rod 67, the opposite end of which is similarly swiveled in the end 68 of the offset part of the corresponding crank lever 65. This arrangement makes it possible to shift the transfer fingers notwithstanding their connection with the crank levers.

At the time the loaf is fully elevated and ready for removal by the transfer fingers 26, there remain end portions of the wrapper (not seen) on the forward vertical edge of the loaf between the tails 60 and 61, and it will be recalled that the bottom end fold 61 has not yet been folded up, so that terminal or final folding action is required, and this is effected by transfer of the loaf from the elevator onto the sealing table 28 (Figs. 1 and 2) in between the upstanding terminal fold and sealing plates 29.

Referring to Figs. 2 and 8, the upright forward edge 29' of each of the fold plates is positioned to be engaged by the unfolded end portions of the wrapper as the loaf moves in between the plates so that only the bottom end fold or tail 61 remains to be turned up. The table 28 is heated electrically, as are both of the upright plates 29 (heating means being contained within the housing 70).

The remaining end fold is accomplished by movement of the loaf between and substantially beyond the terminal fold plates whereby the remaining bottom end folds or tails 61 are caused to ride into upwardly arcuated folding slots 29a in each of the upright plates (Figs. 1 and 8), which results in the folding up of these tails by the time the loaf reaches the forward or higher end of the slots, this fold being sealed by the remaining portions of the heated upright plates as the loaf moves onto the discharge grating or table 30.

A feature of importance in connection with the sealing operation resides in the provision of a forward portion 28a of the heating table (Figs. 1 and 2) between forward portions 29b, which in combination with the forward part of the table constitutes an advance heating station for the loaf. The movement of the transfer means or fingers 26 is calculated to move the loaf only

into this advance station where it remains until the next loaf pushes it on through the terminal fold plates. As a result, the wax or other sealing agency on the paper is adequately melted to seal the bottom and all of the end folds except the bottom tail 61, the latter being sealed last. The resulting seal is firm and neat notwithstanding that there are several thicknesses of wrapper at the ends, due to the preheating and pressing of certain portions only of the end folds in the advance station.

As the sealed loaves move out from between the upright or terminal fold plates, they are pressed in between the discharge guide rail structure 31, where final cooling and congealing of the sealing substance (wax) occurs.

A further feature of the invention resides in the pivotal mounting of the terminal end fold plates on the rails 27 by means of pivot studs 29c (Figs. 1 and 7) extending through the rails into holes in bosses 29d (Fig. 8) above the forward or "advance station" part of each terminal plate. Means for normally urging each terminal plate so as to widen the space therebetween at the so-called advance station, includes the provision of a spring 29e on a lateral stud rod 29f projecting outwardly from each of the plates at the side of the pivot point opposite the "advance station." The stud rods project through elongated slots 29g in cleats 29h (Figs. 1, 7, 8) secured to the rails 27. The springs bear against the cleats and urge the upright terminal fold plates so as to diverge the advance ends 29a thereof away from each other. As a result, the transferred loaf is easily and safely moved in between the plates without danger of tearing or other damage due to any possible irregularities in the shape, size or position of the loaf. The position of the pivot point limits the movement of the plates by a loaf at the advance station so that there is always adequate pressure for the preliminary heating and sealing.

As mentioned heretofore, the discharge guide rails 31 are suspended from the rails 27, this being accomplished by the provision of mounting rods 31a threaded into, or otherwise attached, to the underside of the rails and provided with suitable spacers to dispose the bars in spaced parallel relation.

In operation, the attendant places a loaf on the elevator in raised position to gauge the size of the loaf, whereupon he turns the crank 47 (Fig. 1) until the initial end-fold and holding arms 23 on the elevator are properly adjusted at the opposite ends of the loaf. Such manipulation of the unitary control or crank 47 shifts the rails 27 which carry with them, and correspondingly gauge and position, the intermediate end-fold rockers 25, the terminal fold plates 29, as well as the discharge bars 31. Also, due to the sprocket drive between the main adjusting shaft 45 and the secondary or auxiliary adjusting shaft 51 (Fig. 10), and the flexible cable connection 52 between the auxiliary shaft and the threaded spindle 40 on the loading table, the holding arms 16, 16a on the loading table are likewise properly gauged, only a single adjustment being necessary to condition the entire machine to receive the loaf in question. Thereafter, similar loaves are moved (manually or automatically) from a receiving table 14 (Figs. 1 and 9) onto the reciprocable loading table 15 between arms 16, and a clutch control 75 (Fig. 1), on the side rail of the main frame, is actuated to start the machine, which will go through one complete

wrapping operation and stop, whereupon another loaf is moved from the receiving table onto the loading table, it being observed that the loading table reciprocates from its normal position of rest alongside the table 14 to a position in alignment alongside of the lowered elevator.

The objects, advantages, and economies of the invention may be realized in other arrangements and forms of construction and operation of the parts of the preferred embodiment of the machine described in detail herein, and the appended claims are therefore understood to include all equivalent arrangements and embodiments fairly coming within their scope.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. In a wrapping machine, in combination, a movable loading table cooperable with an article elevator, adjustable article holding means on said loading table and movable therewith, adjustable end fold means cooperating with said elevator for movement therewith to engage an article moved from said loading table onto the elevator, and mechanism actuated by a unitary control for a simultaneously and correspondingly adjusting said holding means and said end fold means to accommodate articles of different size in the machine.

2. In a wrapping machine, in combination, a movable loading table cooperable with an article elevator and adjustable transfer means for removing articles from said elevator, adjustable article holding means on said loading table, adjustable end fold means cooperating with said elevator for movement therewith to engage an article moved from said loading table onto the elevator, and mechanism actuated by a unitary control for simultaneously and correspondingly adjusting said holding means, said transfer means, and said end fold means to accommodate articles of different size in the machine.

3. In a device of the class described, in combination, cooperating wrapping instrumentalities including a plurality of movable article carriers and coacting means for effecting transfer of an article from one carrier to another and subsequent removal of said article from the last-mentioned carrier, adjustably movable article engaging means on said carriers, and relatively stationary, unitary control means, and coacting adjusting mechanism operatively connected with said adjustable holding means for actuation to effect simultaneous corresponding adjusting movement of said holding means.

4. In a device of the class described, in combination, cooperating wrapping means including a reciprocable article elevator and a reciprocable article loading table and means for automatically effecting movement of an article thereon onto said elevator, transfer means for automatically effecting removal of an article from said elevator after movement thereby to a predetermined, adjustably movable article holding means on said loading table, adjustably movable article holding and wrapping means arranged for movement with said elevator, and terminal wrapping means including a pair of adjustably movable end fold members, together with adjusting mechanism actuated by a unitary control and having driving connection with said holding means on the loading table, said holding and wrapping means on the elevator, and said end fold members, for simultaneous adjusting operation to accommodate articles of different size.

5. In a wrapping machine, in combination, cooperating wrapping means including a reciprocable article wrapping elevator and a reciprocable loading table coacting with said elevator and including means for automatically moving an article thereon onto said elevator, transfer means including spaced adjustably movable article engaging members arranged for timed movement relative to movement of the elevator to engage and move an article on the latter off of the same, adjustably spaced end fold members between which an article is moved by said transfer means, adjustably movable article holding members on said loading table, adjustably movable article engaging members arranged to move with said elevator, and adjusting mechanism including a single control member and operatively interconnected with all of said adjustably movable members to effect simultaneous adjustment thereof whereby said machine may be adjusted to receive and wrap articles of different size by operation of only a single control.

6. In a wrapping machine, in combination, wrapping mechanism including a reciprocable article wrapping elevator, adjustably spaced terminal folding and sealing means opposite a particular reciprocal position of said elevator, transfer means including adjustable article engaging and moving members arranged at said particular position for cooperation with said elevator to transfer an article from the elevator in between said terminal folding and sealing means, a reciprocable loading table and article ejecting means coacting with said elevator to effect initial wrapping of an article by automatically transferring the same into a wrapper and onto said elevator, adjustably movable article holding means on said loading table, adjustably movable article holding and initial wrapping means arranged to move with said elevator, and adjustment means including adjusting mechanism actuated by a unitary control and operatively connected with said holding means on the loading table, said holding and initial wrapping means, said article engaging and moving members of the transfer means, and said terminal folding and sealing means, for simultaneous adjusting movement of all of the same.

7. In a wrapping machine, in combination, wrapping mechanism including a reciprocable article wrapping elevator, adjustably spaced terminal folding and sealing means opposite a particular reciprocal position of said elevator, transfer means including adjustable article engaging and moving members arranged at said particular position for cooperation with said elevator to transfer an article from the elevator in between said terminal folding and sealing means, adjustable guide means arranged to receive and guide articles transferred as aforesaid away from said terminal means, a reciprocable loading table and article ejecting means coacting with said elevator to effect initial wrapping of an article by automatically transferring the same into a wrapper and onto said elevator, adjustably movable article holding means on said loading table, adjustably movable article holding and initial wrapping means arranged to move with said elevator, and adjustment means including adjusting mechanism actuated by a unitary control and operatively connected with said holding means on the loading table, said holding and initial wrapping means, said article engaging and moving members of the transfer means, said terminal folding and sealing means, and said guide

means, for simultaneous adjusting movement of all of the same.

8. In combination, in a wrapping machine, coating movable article wrapping carriers and coating means for automatically effecting transfer of a narticle from one carrier to another, adjustably movable article receiving and holding means arranged to move with said carriers, adjusting mechanism for adjustably moving the holding means of a particular one of said carriers, said adjusting mechanism being arranged to move with said particular carrier, and relatively stationary adjusting mechanism for moving the remaining article holding means associated with the other carrier, and means arranged to drivingly interconnect the aforesaid adjusting mechanisms for simultaneous adjusting operation.

9. In a wrapping machine, in combination, coating movable article wrapping carriers and coating means for automatically transferring articles from one particular carrier to another and from said other carrier into adjustable folding means, adjustable article holding means and operating mechanism therefor on said particular carrier, adjustably movable supporting means positioned relative to said other carrier to mount a pair of article receiving and holding members for movement with said other carrier, said receiving and holding members being adjusted by adjusting movement of said supporting means, relatively stationary adjusting mechanism for adjustably moving said supporting means, and means providing a driving connection between said stationary adjusting mechanism and said operating mechanism on said particular carrier, whereby simultaneous adjustment of the several article holding means for the carriers may be effected.

10. In a wrapping machine, in combination, a reciprocable wrapping elevator and coating reciprocable loading table, means for automatically transferring an article from the table onto and off of said elevator in timed relation to the movement of the latter and said table, means providing a pair of supports mounted for adjustable spacing movement opposite one terminus of reciprocation of said elevator, a pair of article wrapping and holding members one each of which is mounted on one of said supports so as to move adjustably toward and away from each other responsive to adjusting movement of the support and said pair of members being further mounted on said supports so as to be moved back and forth cooperably with said elevator, relatively stationary adjusting mechanism actuated by a unitary control for adjustably moving said supports, adjustably movable article holding means and actuating mechanism therefor on said loading table, and means providing a driving connection between said stationary adjusting mechanism and the aforesaid actuating mechanism on said table for simultaneous adjusting operation by said unitary control.

11. In a wrapping machine, in combination, a vertically reciprocable wrapping elevator and a coating horizontally reciprocable loading table, a pair of supports mounted above the upper terminus of said elevator for adjustable spacing toward and away from each other in a substantially horizontal direction, relatively stationary adjusting mechanism including a manual control for adjustably moving said supports, wrapping instrumentalities mounted on said supports for engagement with opposite ends of an article on

said elevator, adjustably movable article holding means and adjusting mechanism therefor on said loading table, together with means drivingly interconnecting said stationary adjusting mechanism and said adjusting mechanism on the loading table for actuation by operation of said manual control.

12. In a wrapping machine, a vertically reciprocable article wrapping elevator and movable loading means coating therewith, supports mounted for adjustable movement in a substantially horizontal direction toward and away from each other above the upper terminus of said elevator, adjusting mechanism including a unitary manual control for adjustably moving said supports toward and away from each other, coating article holding means mounted on said supports for movement with said elevator and adjustably moved relative to each other by adjusting movement of said supports, additional wrapping means mounted on said supports at one side of said upper terminus, and means driven cooperably in timed relation with the movement of said elevator into said terminus for engaging and moving a partly wrapped article thereon into wrapping engagement with said additional wrapping means.

13. In a wrapping machine, a vertically reciprocable article elevator arranged for coaction with a movable loading device to partly wrap an article, adjustably spaced article holding members and adjusting mechanism therefor on said loading device; a pair of supports mounted above the upper terminus of said elevator for adjustable spacing correspondingly with the spacing movement of said holding members on the loading device, relatively stationary adjusting mechanism for spacing said supports, means operatively connecting said stationary adjusting mechanism with the relatively movable adjusting mechanism on the loading device for simultaneous and corresponding adjusting operation, coating article wrapping and holding members each mounted on one of said supports for adjusting movement toward and away from each other therewith and further arranged to move up and down with said elevator, additional wrapping instrumentalities mounted in adjustably spaced relation by said supports at one side of said terminus to receive a partly wrapped article from said elevator, and transfer members adjustably mounted in spaced relation by said supports and cooperating in timed relation with the movement of said elevator into raised position to remove an article therefrom into wrapping engagement with said additional wrapping instrumentalities.

14. In a wrapping machine, a vertically reciprocable article elevator arranged for timed coaction with a movable loading device to partly wrap an article, adjustably spaced holding members and actuating mechanism therefor movable with said device for adjustment to holdingly engage opposite ends of different sized articles placed on said device, a pair of horizontal supporting rails mounted above an upper terminus of said elevator for adjustable spacing in mutually parallel relationship corresponding directionally with the spacing of said holding members on the loading device, relatively stationary adjusting mechanism including a manually controlled operating member for moving said rails, means drivingly interconnecting said last-mentioned adjusting mechanism with said actuating mechanism on the loading device for simultaneous adjusting operation, an initial end fold and holding member mounted on each of said rails in adjustably

spaced relation to receive and hold said article, said end fold and holding members being further arranged to reciprocate with said elevator, intermediate end fold members mounted in adjustably spaced relation by said rails to foldingly engage an article moved into said terminus by said elevator, terminal fold means opposite said terminus, and means cooperating in timed relation with said elevator to transfer said article therefrom into operative engagement with said terminal fold means.

15. In a bread wrapping machine, a vertically reciprocable loaf elevator arranged to effect initial partial wrapping of a loaf, a pair of substantially horizontal rails mounted for adjustable spacing above the upper terminus of said elevator and adjusting means for spacing said rails, initial end fold means including members mounted by each of said rails for adjustable spacing by said rails, each of said members being mounted for vertical reciprocation and having lower portions movably disposed on said elevator for reciprocation therewith, initial end fold and loaf holding means on said lower portions of each of said last-mentioned members to engage opposite ends of a loaf moved therebetween by a loading agency, intermediate end fold members mounted on each of said rails so as to be foldingly engaged by opposite ends of a partly wrapped loaf elevated to said terminus, horizontally reciprocated transfer members on said rails and actuated cooperably with said elevator to engage and remove said loaf therefrom and away from said intermediate end fold members, terminal end fold members mounted in adjustably spaced relation by said rails in position to receive a loaf removed from said elevator by said transfer means.

16. In a wrapping machine, initial end fold means for cooperation with a vertically reciprocable article wrapping carrier and a coacting loading agency, said fold means comprising: spaced end fold arms mounted on spaced, co-directionally reciprocable mounting members each having a lower end portion disposed to rest on said elevator for movement up and down thereby and therewith, an article being moved by said loading agency against a wrapper in between said end fold arms whereby initial folds of the wrapper are effected at opposite ends of said article.

17. In a wrapping machine, intermediate end fold means for cooperation with a vertically reciprocable article wrapping elevator and coacting initial wrapping means, said end fold means comprising: a pair of fold members mounted in spaced relation near the upper terminus of said elevator to be in a position substantially opposite the ends of a partly wrapped article elevated to raised position by said elevator, said fold members each being mounted for rocking movement from a normal position, inclined in a direction toward said ends of the raised article, so as to lie across the path of said ends as the article is elevated into raised position, to a position substantially flush against said ends responsive to elevation of said article therebetween, means yieldingly urging said fold members into normal position, each of said fold members being provided with an extension moved thereby, responsive to folding operation thereof, toward the supporting surface of said elevator to pressingly engage fold portions on said article effected by said initial wrapping means and projecting on or above said supporting surface of the elevator.

18. In a wrapping machine, intermediate end

fold means cooperating with a vertically reciprocable article wrapping elevator and coacting initial end fold means, said intermediate end fold means comprising: a pair of rocker plates mounted near the upper terminus of said elevator for rocking movement toward and away from the ends of an article elevated to said terminus on the elevator, means yieldingly urging each of said rocker plates into a normal position to project across the path of said ends of the article for engagement by the same as the article is moved into elevated position, said rockers being rocked into position pressing substantially flush against said ends by movement of said article into fully elevated position, and means operably controlled by movement of said elevator into fully raised position for additionally rocking said rockers to relieve the pressure thereof against said end of the article when the elevator is in fully elevated position.

19. In a wrapping machine, terminal fold means comprising a pair of fold plates each mounted for upright pivotal movement about substantially vertical axes into and out of parallel relationship, the extremities thereof in one horizontal direction constituting the leading portion thereof of the pair of plates and between which leading portions an incompletely wrapped article is moved with each of its opposite ends approximately flush with one of said plates, and means yieldingly urging said plates to diverge said leading portions thereof to widen the entrance space into which said article is moved.

20. In a wrapping machine of the type employing wrapping material sealed by heating, terminal folding and sealing means comprising: a pair of electrically heated folding and sealing plates each mounted upright for pivotal movement about substantially vertical axes into and out of parallel relationship, the pivotal axes thereof being situated between opposite edge portions of the respective plates in a horizontal direction, one of said edge portions of each plate constituting a leading edge, means yieldingly pivoting said plates so as to diverge said leading edges to widen the space into which an article of predetermined size incompletely wrapped with the aforesaid wrapping material may be moved, said plates having means engaged by portions of said wrapper to fold same by movement of said article between said plates, said wrapper also being sealed during transit of the article between the plates.

21. In a wrapping machine, terminal wrapping and sealing means for use with wrapping material sealed by heating, said terminal wrapping and sealing means comprising: a pair of upright, electrically heated fold plates facing each other and between which the opposite ends of an incompletely wrapped article is moved in a particular and substantially horizontal direction, means providing a heating table beneath said plates over which the article is moved as aforesaid, means on said plates between the entrance and exit extremities thereof for effecting end folds, there being a heated space on said plates and heating table between the entrance extremities and said folding means constituting a preheating station adequate to accommodate one article of predetermined average size, together with mechanism for moving an incompletely wrapped article into said preheating station between said plates, the article resting in said preheating station until moved therefrom on through said terminal fold means and past said plates by

articles subsequently moving into said preheating station.

22. In a wrapping machine, intermediate end fold means cooperating with a vertically reciprocable article wrapping elevator and coacting initial end fold means, said intermediate end fold means comprising: a pair of folding rocker members mounted near the upper terminus of said elevator for rocking movement toward and away from the ends of an article elevated to said terminus on the elevator, means yieldingly urging each of said folding rocker members into a normal position to project across the path of said ends of the article for engagement by the same as the article is moved into elevated position, said rockers being rocked into position pressing substantially flush against said ends by movement of said article into fully elevated position therebetween, and means including an adjustable arm for each rocker and arranged for engagement and movement by means coacting with said elevator when the latter is moved toward fully raised posi-

tion for additionally rocking said rocker members to relieve the pressure thereof against the ends of the article when the elevator is in fully elevated position.

23. In a wrapping machine, folding means including a pair of opposite fold plates each arranged for pivotal movement about parallel vertical axes, said axes being respectively positioned between the opposite extremities of said plates in a horizontal direction, and means yieldably pivoting said plates to diverge corresponding ends thereof, constituting leading edges, to widen the path between said plates for an article moving in between the same, said plates thereafter pressing tightly against said article as the same moves away from said leading edges past said pivotal axes, whereby the pressure of said plates is progressively increased as the article moves between the same.

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