Nov. 27, 1945. G. C. PAPENDICK 2,389,812

MEANS OF PACKAGING SLICED LOAVES

Original Filed April 3, 1941 5 Sheets-Sheet 1

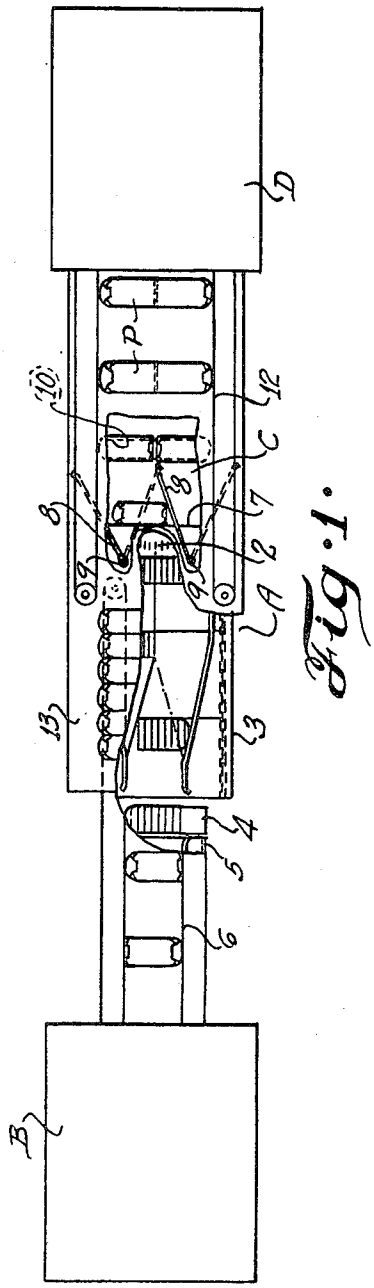


Fig. 1.

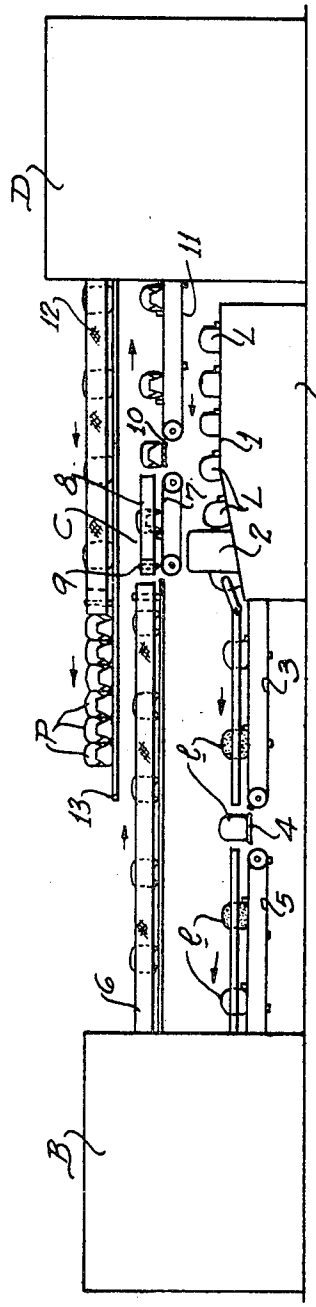


Fig. 2.

Inventor
Gustav C. Papendick, Deceased,
By Elizabeth Papendick, Executrix,
By Ralph Kaesh
Attorney

Nov. 27, 1945. G. C. PAPENDICK 2,389,812

MEANS OF PACKAGING SLICED LOAVES

Original Filed April 3, 1941 5 Sheets-Sheet 2

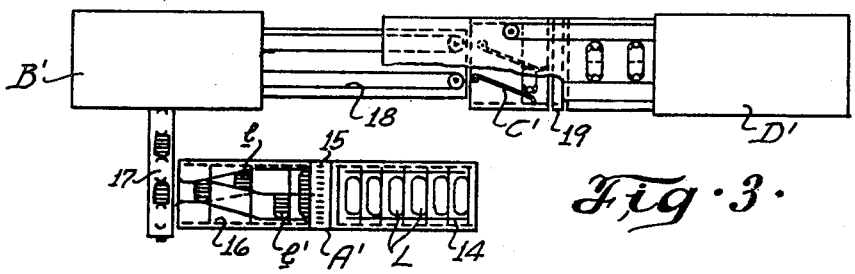


Fig. 3.

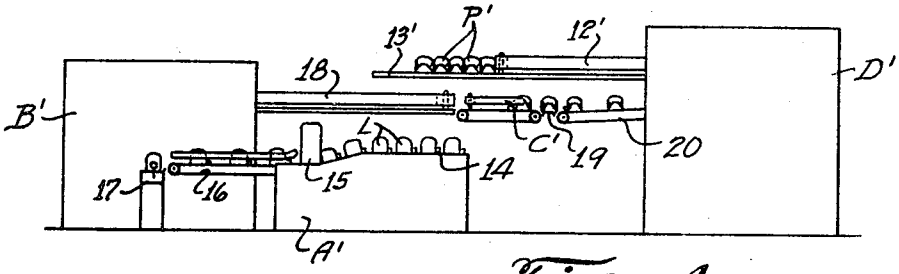


Fig. 4.

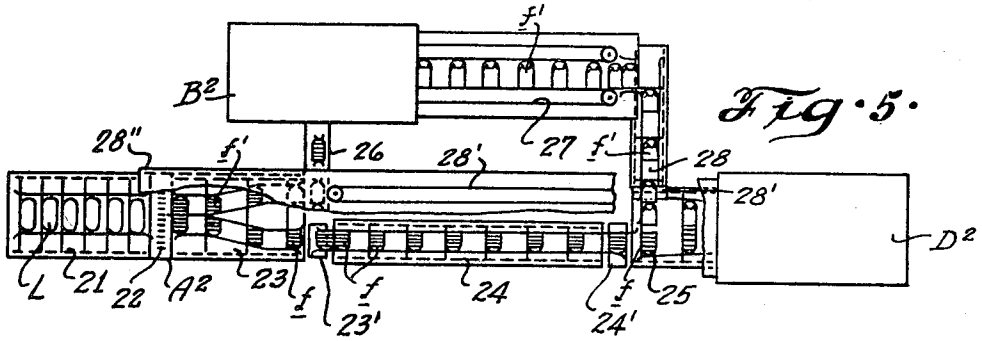


Fig. 5.

Fig. 6.

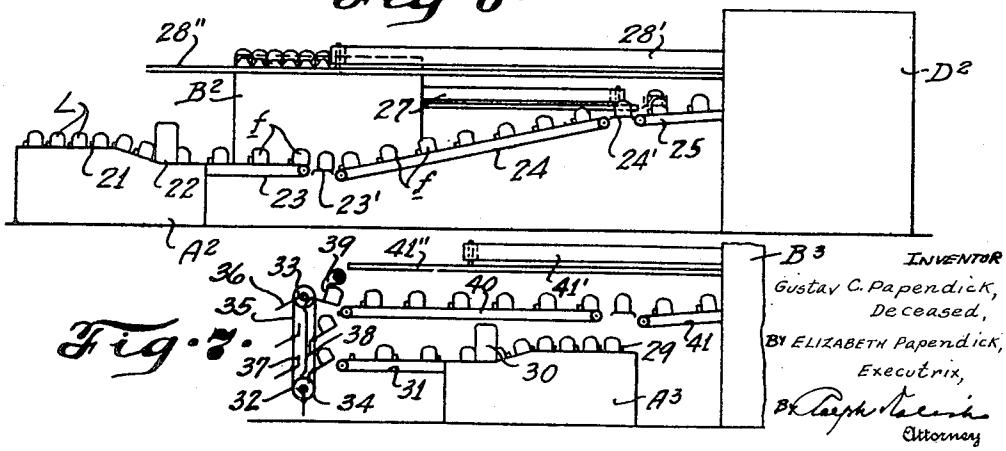


Fig. 7.

INVENTOR
Gustav C. Papendick,
Deceased,
BY ELIZABETH Papendick,
Executrix,
BY Ralph Mason
Attorney

Nov. 27, 1945. G. C. PAPENDICK 2,389,812

MEANS OF PACKAGING SLICED LOAVES

Original Filed April 3, 1941 5 Sheets-Sheet 3

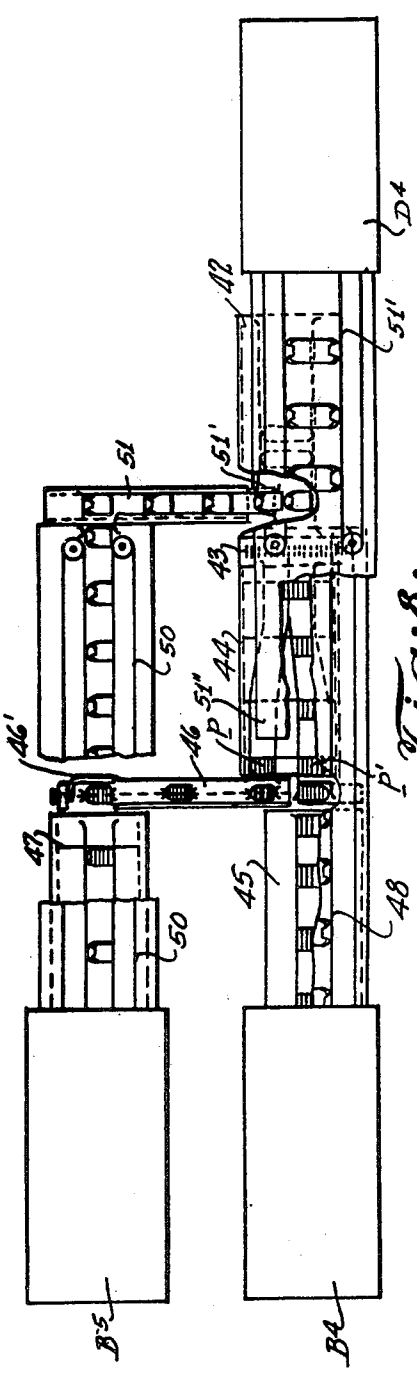


Fig. 8.

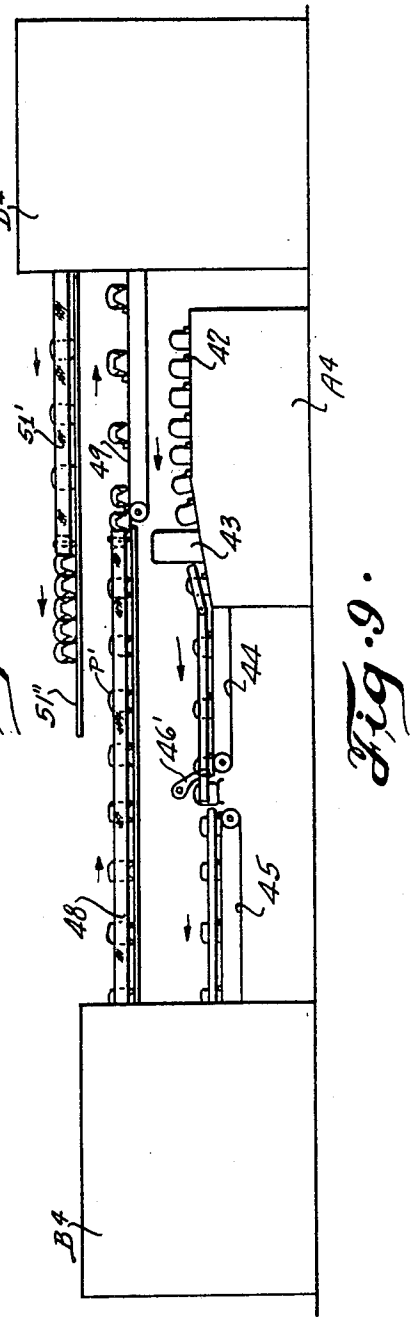


Fig. 9.

Inventor
Gustav C. Papendick, Deceased
By Elizabeth Papendick, Executrix
By Ralph Stalman
Attorney

Nov. 27, 1945. G. C. PAPENDICK 2,389,812

MEANS OF PACKAGING SLICED LOAVES

Original Filed April 3, 1941 5 Sheets-Sheet 4

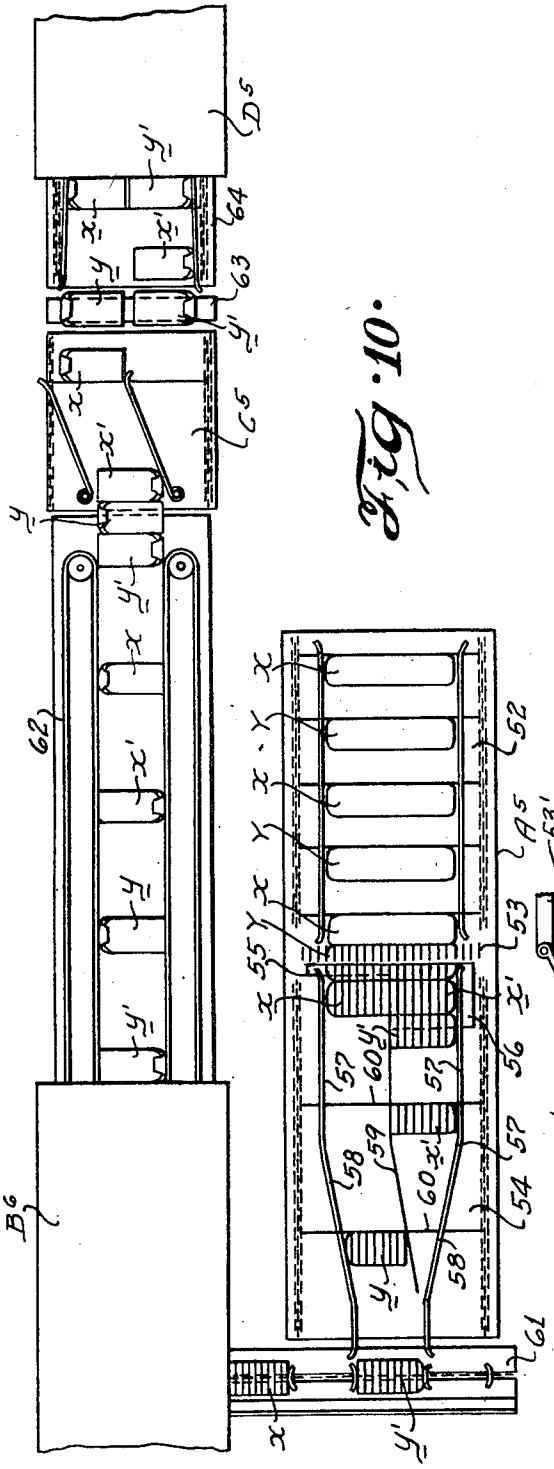


Fig. 10.

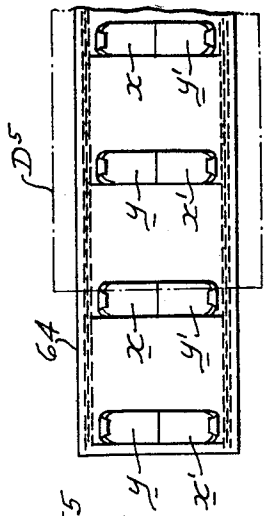


Fig. 12.

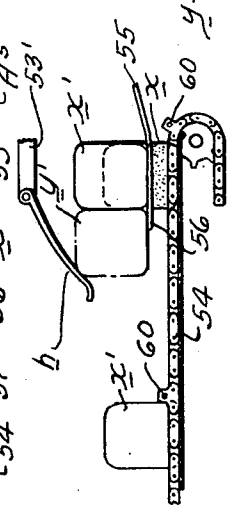


Fig. 11.

Inventor
Gustav C. Papendick,
Deceased
By Elizabeth Papendick, Executrix
By
Attorney

Nov. 27, 1945. G. C. PAPENDICK 2,389,812

MEANS OF PACKAGING SLICED LOAVES

Original Filed April 3, 1941 5 Sheets-Sheet 5

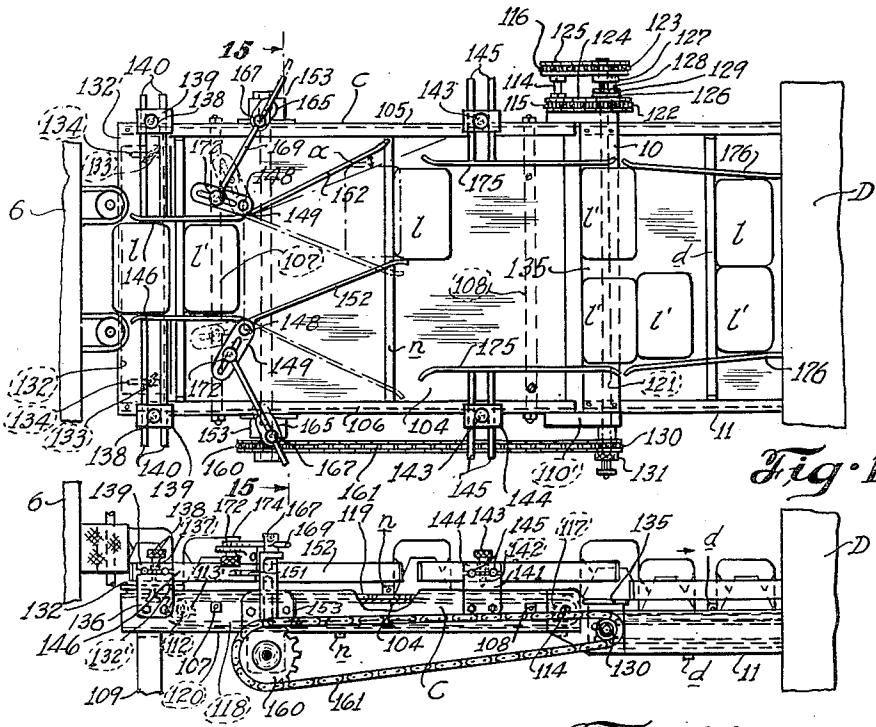


Fig. 13.

Fig. 14.

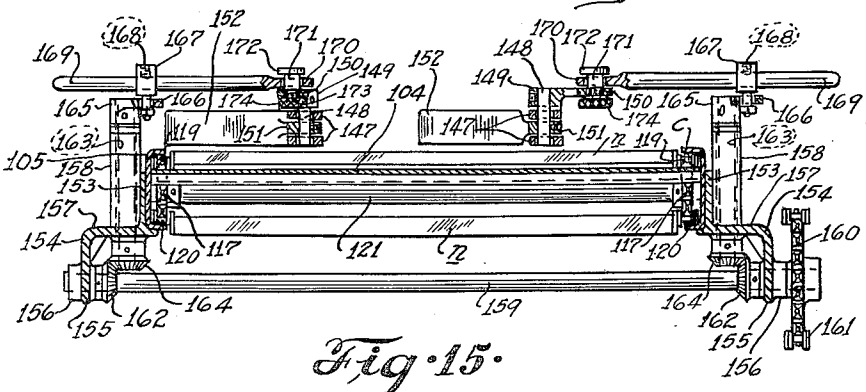


Fig. 15.

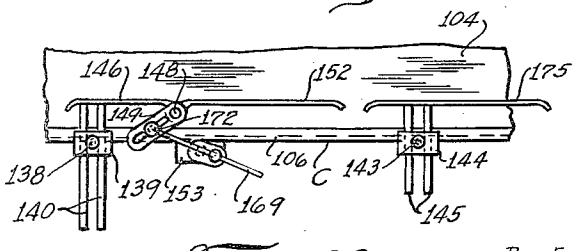


Fig. 16.

INVENTOR
GUSTAV C. PAPENDICK.
BY ELIZABETH PAPENDICK, EXECUTRIX.
BY Alfred W. Petschaft.
ATTORNEY

Patented Nov. 27, 1945 2,389,812

UNITED STATES PATENT OFFICE

2,389,812

MEANS OF PACKAGING SLICED LOAVES

Gustav C. Papendick, deceased, late of University City, Mo., by Elizabeth Papendick, executrix, University City, Mo., assignor to Elizabeth Papendick, University City, Mo.

Original application April 3, 1941, Serial No. 386,628, which is a division of application Serial No. 269,809, April 24, 1939. Divided and this application August 16, 1943, Serial No. 498,806

7 Claims. (Cl. 198—30)

This invention has to do with certain new and useful means for handling and packaging sliced bread loaves, is related to the subjects-matter of Letters Patent No. 2,211,433, of August 13, 1940, and Nos. 2,247,401, 2,247,692, 2,247,693, 2,247,694, and 2,247,695, all of July 1, 1941, and is a division of co-pending application, Serial No. 386,628, filed April 3, 1941, which is, in turn, a division of application Serial No. 269,809, filed April 24, 1939 (now U. S. Patent No. 2,247,401, issued July 1, 1941).

It has been discovered that it is commercially desirable to recombine or assemble individually wrapped loaf fractions for further wrapping in a composite or multiple package. Such a multiple packaged fractionated loaf will remain fresh for a longer period of time, inasmuch as the housewife may open the outer wrap and remove a single separately wrapped fraction, leaving the remainder of the loaf in substantially double-wrapped approximately or substantially airtight condition until the first fraction has been completely consumed.

In addition, it has also been discovered that such a multiple wrapped fractionated package effectively solves the rather difficult and annoying problem encountered in merchandising composite packaged loaves, that is to say, loaves in which the fractions are of different kinds of bread, such as whole wheat, raisin, and white bread. Experience has demonstrated that the small family appreciates having a variety of different types of bread in the same package. Unfortunately, however, there is a tendency on the part of certain kinds of bread to absorb the flavor of other types of bread. White bread, for instance, when packaged compositely with whole wheat bread, will absorb a considerable amount of the whole wheat flavor and acquire a slightly modified taste, which, though not greatly objectionable, is nevertheless unsatisfactory to the more or less discriminating and particular housewife. By separately wrapping the individual fractions, such absorption by the one of the flavor of another is obviated when such separated or individual fractions are assembled as a composite loaf in an outer wrapper.

It is evident, however, that since the price of bread is relatively low and the margin of profit small, composite and multiple wrapped sliced bread packaging must be accomplished at relatively high speed and low expense and without appreciably affecting the total cost of production or manufacture.

The invention hence has for its primary objects the provision of unique means for preparing and handling multiple and composite wrapped sliced bread packages efficiently, economically, and conveniently, which do not add materially to the cost of production of the bread loaves, and which are high-speed in operation and require a minimum of manual labor.

And with the above and other objects in view, the invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings (4 sheets)—

Figure 1 is a diagrammatic plan view, partly broken away, of bread-handling mechanism uniquely constructed and arranged for practicing a preferred form of bread-packaging embodying the present invention;

Figure 2 is a diagrammatic side elevational view of the bread-handling and packaging machine arrangement of Figure 1;

Figures 3, 4, 5, 6, and 7 are schematic views of unique machine arrangements for practicing modified methods of bread-handling and packaging of the invention;

Figures 8 and 9 are plan and side elevational views, respectively, of an additional unique machine arrangement for practicing a further modified method of bread-handling and packaging of the invention;

Figure 10 is a plan view of still another unique machine arrangement for practicing particularly a modified method of composite loaf-handling and packaging of the invention;

Figures 11 and 12 are fragmentary views of the method of practicing machine arrangement of Figure 10; and

Figure 13 is a top plan view of an article handling mechanism constructed in accordance with and embodying my present invention;

Figure 14 is a side elevational view of the mechanism;

Figure 15 is a transverse sectional view of the mechanism taken approximately along the line 15—15, Figure 13; and

Figure 16 is a fragmentary top plan view of the article handling mechanism, illustrating the side guides in a modified position of adjustment.

Referring now in more detail and by reference characters to the drawings, A designates a bread loaf slicing and fractionating machine which includes a loaf conveyer, a slicing mechanism 2, and a fractionating transfer conveyer 3, all preferably constructed in accordance with the disclosures of said previously mentioned co-pending application and Letters Patent.

At the discharge end of the transfer conveyer 3, is a so-called dead plate 4 bridging the gap between the transfer conveyer 3 and a longitudinally disposed rearwardly extending intake conveyer 5 of a substantially conventional first wrapping machine B having a discharge conveyer 6 disposed in spaced relation, and extending forwardly over the intake conveyer 5 and transfer conveyer 3.

By way of explanation, it may be pointed out that the interposition of a dead plate between the transfer conveyer 3 and the intake conveyer 5 permits the ends of the two conveyers to be spaced from each other for mechanical convenience in construction. Since belt conveyers must be trained over end pulleys, there is a trough-like valley formed between them at their ends and sliced loaves would be upset and disrupted if this valley were not bridged by a flat plate.

Operatively mounted on the same plane as, and disposed at the forward end of, the discharge conveyer 6, is a switching mechanism C, for guiding the forwardly traveling wrapped bread loaf fractions first to one side and then to the other side of a discharging dead plate 10, which serves primarily the same function as the dead plate 4.

The switching mechanism C comprises a table 104 operatively provided along its opposed longitudinal margins with channel-shaped side rails 105, 106, in turn operatively held together by transversely extending brace rods 107, 108. At their forward end, the side rails 105, 106, are supported from the floor by leg members 109 and at their rearward end connected by means of connector blocks or the like 110, 110', in forwardly and upwardly spaced relationship to the forward end of the intake conveyor 11 of a secondary wrapping machine D having a plurality of conventionally supported and driven parallel flight bars *d*.

Journaled at its ends in the side rails 105, 106, and extending horizontally beneath the forward end of the conveyer table 104, is an idler shaft 112 provided with a pair of sprockets 113 respectively positioned inwardly of and adjacent to the inner faces of the side rails 105, 106. Extending horizontally beneath the rearward extremity of the conveyer table 104 and journaled at its one end in the side rail 106 and adjacent block 110' and at its other end journaled in and projecting through both the side rail 105 and the opposite block 110, is a drive shaft 114 provided on its projecting end with a pair of axially spaced sprockets 115, 116. Intermediate its journaled ends, the shaft 114 is provided with a pair of sprockets 117 respectively positioned in peripheral alignment with the sprockets 113. Trained over the peripherally aligned pairs of sprockets 113, 117, is a pair of endless conveyor chains 118, each having an upper rearwardly traveling run 119 extending over the upper face of the conveyer table 104 and a lower return run 120 extending beneath the conveyer table 104. Conventionally mounted at their ends on, and extending transversely between, the conveyer chains 118, is a plurality of spaced parallel flight bars *n*, all as best seen in Figure 13 and for purposes presently more fully appearing.

The intake conveyer 11 of the secondary wrapping machine D is provided with a conventional conveyer shaft 121 extending horizontally beneath, and projecting outwardly on either side of, the forward end thereof. On its one projecting end, the shaft 121 is provided with a pair of freely rotating sprockets 122, 123, positioned in peripheral alignment respectively with the sprockets 115, 116, and connected thereto by drive chains 124, 125. The sprockets 122, 123, are provided with juxtaposed hubs 126, 127, each having an annular series of recesses for conventional pin clutch engagement with the pin member 128 of a clutch disk 129 slidably keyed upon the shaft 121. The tooth ratio between the sprockets 122 and 115 is "two to one," whereas the tooth ratio between the sprockets 116 and 123 is "one to one." It will be clear, therefore, that, when the pin clutch disk 129 is shifted into engagement with the hub 126 of the sprocket 122, the drive shaft 114 will be driven at twice the speed of the shaft 121, while when the clutch member 121 is engaged with the hub 127 of the sprocket 123, the shafts 114 and 121 will be driven at the same speed. On its opposite projecting end, the shaft 121 is provided with a freely rotating sprocket 130, which is drivingly connected to the shaft 121 by means of a conventional pin clutch and indexing mechanism 131, all as best seen in Figure 13 and for purposes presently more fully appearing.

Extending transversely across the forward end of the conveyor table 104, is a so-called dead-plate 132 provided with a pair of longitudinal slots 134 for adjustably accommodating threaded studs 133 mounted on a stationary dead-plate 132' suitably supported over the table 104 on channels 105, 106. Likewise mounted on, and extending horizontally across, the forward end of the intake conveyer 11, is a second so-called dead plate 135, all as best seen in Figure 14 and for purposes presently more fully appearing.

Bolted or otherwise rigidly secured upon the outwardly presented faces of, and projecting upwardly from, the opposite side rails 105, 106, is a pair of parallel bracket members 136 each formed with an upper flanged portion provided centrally with a threaded vertical recess 137 for receiving a knurled thumb screw 138 for securing thereupon a clamping plate 139. Shiftably held between the bracket 136 and the clamping plate 139 on opposite sides of the screw 138, is a pair of parallel supporting rods 140. Similarly bolted or otherwise rigidly secured upon the outwardly presented faces of, and projecting upwardly from, the opposite side rails 105, 106, is a pair of parallel bracket members 141 each likewise formed with an upper flanged portion provided centrally with a threaded vertical recess 142 for receiving a knurled thumb screw 143 for securing thereupon a clamping plate 144. Shiftably held between the bracket 141 and the clamping plate 144 on opposite sides of the screw 143, is a pair of parallel supporting rods 145, all as best seen in Figure 14 and for purposes presently more fully appearing.

Welded or otherwise rigidly secured upon the inner ends of the supporting rods 140, are opposed parallel loaf guides 146 extending longitudinally over the conveyer table 104 to a point spaced from the rearward margin of the dead plate 132 by a distance substantially greater than the width of a single loaf fraction.

At their rearward extremities, the guide members 146 are each provided with a pair of vertically spaced registering pivot eyes 147, suitably journaled in which is a pintle 148, and pinned on a projecting end of the pintle 148, is a crank arm 149 provided with a longitudinal slot 150.

Similarly pinned or otherwise fixed upon each of the pintles 148 intermediate the pivot eyes 147, are rotary hinge members 151 each preferably integrally provided with swingable or so-called "switching" guide members 152. It should be noted in this connection that the guide members 152 are not parallel, but are angularly disposed with respect to each other by a small angular departure, as indicated in Figure 13 by the angle α, for purposes presently more fully appearing.

Bolted or otherwise fixed upon the outer faces of the side rails 105, 106, is a pair of transversely aligned members 153 each preferably integrally

provided with a downwardly projecting extension-bracket 154 having the shape generally of an inverted L and provided in its vertical leg 155 with a fixed bearing bushing 156. Mounted in, and extending through, the horizontal leg 157 of the bracket 154 and supported along its side face against the member 153, is a vertically extending elongated bearing sleeve 158 projecting upwardly substantially beyond the upper margin of the side rails 105, 106, all as best seen in Figure 15 and for purposes presently more fully appearing.

Journaled at its ends in the bushings 156 and extending horizontally beneath the return run 120 of the conveyer chains 118, is a shaft 159 provided on its outwardly extended end with a sprocket 160 connected by means of a chain 161 to the sprocket 130. Pinned or otherwise fixed to the shaft 159 just inwardly of the bracket legs 155, are bevel gears 162, all as best seen in Figure 15 and for purposes presently more fully appearing.

Rotatively mounted in, and extending through, the sleeves 158, is a pair of stub-shafts 163 provided at their lower extremities with bevel gears 164 having meshing engagement with the bevel gears 162 and at their upper extremities provided with crank members 165, which latter are, in turn, provided with apertures 166 for rotatively receiving connector blocks 167. Mounted in the connector blocks 167 for longitudinally shiftable adjustment and secured in adjusted position by means of set screws 168, are pitmans or connecting rods 169 each provided at its inner end with a flattened and apertured bearing eye 170 for rotatively receiving a bearing stud 171 having a flat retaining head 172 and a downwardly extending threaded shank 173 projecting through the slot 150 of the switching guide crank arm 149 and provided on its lower end with a knurled tightening nut 174, all as best seen in Figure 15 and for purposes presently more fully appearing.

Welded or otherwise fixed upon the inner ends of the rods 145, is a pair of opposed parallel straight guides 175 extending from a point just rearwardly of the arc of swing of the switching guides 152 to a point above the rear dead plate 135, as best seen in Figures 1 and 2 and for purposes presently more fully appearing. As will later more fully appear, it is preferable in adjusting the straight guides 175 to provide a space greater than the combined length of the loaf fractions to be aligned therebetween. It is hence desirable to provide a pair of adjustable auxiliary guides 176 associated with the intake conveyer 11 of the wrapping machine D, which are in registration at their forward ends with the ends of the guides 175 and are inclined obliquely inwardly toward each other to compensate for the free distance between the loaf fractions due to the adjustment of the guides 175 and, accordingly, shift the loaf fractions into endwise abutment.

If, in use, it is desired to align two fractions in full-length loaf formation, the guides 175 and 176 are suitably adjusted, as above described, to accommodate the full-length loaf therebetween. The forward guides 146 are similarly adjusted to accommodate a single fraction therebetween. The pitmans 169 are adjusted for length in the connecting blocks 168 and for amplitude of arc, or so-called throw, by shifting the bearing studs 171 along the slots 150 of the switch guide crank arms 149. The pin clutch disk 129 is shifted into engagement with the hub 126 of the sprocket 122, so that the flight rods n will be driven at twice the speed of the flight rods d. Similarly the pin clutch 131 is engaged with the sprocket 130.

As the mechanism is started in operation, the loaf fractions l, l', are delivered in consecutive alignment across the dead-plates 132' and 132 to to the conveyer table 104 between the guides 146. As a loaf fraction l is deposited on the conveyer table 104, it is progressed rearwardly by one of the flight bars n. At the same time, the switch guides 152 are swung over to the position shown in full lines in Figure 13, thus shifting the loaf fraction l over against the one straight guide 175, as shown, whence it is further progressed by the flight bar n and finally delivered upon one side of the rear dead plate 135. Since the switch guides 152 are non-parallel, flaring angularly outwardly from each other on the angle α, as above pointed out, there will be sufficient increasing space between said guides 152 to freely accommodate the diagonal dimension of the successive traveling loaf fractions l, as best seen in Figure 13.

The succeeding fraction l' is meanwhile progressed by a succeeding flight bar n and is shifted to the opposite side of the conveyer table 104 against the other straight guide 175, being finally delivered upon the rear dead plate 135 in axially spaced alignment with the companion loaf fraction l. Since the flight bars d of the intake conveyor 11 are moving at one-half the speed of the flight bars n, the next succeeding loaf fractions l, l', upon being progressed to the dead plate 135, will push both of the previous fractions l, l', off the dead plate 135 in front of one of the flight bars d of the intake conveyer 11 for delivery to the wrapping machine D. As the aligned loaf fractions l, l', are moved into the intake conveyer 11, they are shifted toward each other into endwise abutment by the oblique auxiliary guides 176.

In case it becomes necessary to accommodate loaves or loaf fractions of a different length, the switching conveyer C may be readily re-adjusted by shifting the guides 175, the guides 146, and changing the length and throw of the pitmans 169, as above described. If desired, the driving mechanism for the shifting guides may be disconnected by shifting the pin clutch 131 out of engagement with the sprocket 130 and adjusting the guides 146, 152, and 175 into alignment, as shown in Figure 16, in the provision of a simple, non-shifting transfer conveyer.

Thus the movement of the shiftable guides 152 is entirely automatic and in timed relation with the propelled loaf-fractions, the guides 152 being also readily relatively adjusted to accommodate loaf-fractions of different length.

Operatively disposed forwardly of the dead plate 10, is an intake-conveyer 11 of a second wrapping machine D constructed and adapted for wrapping a package having a length equal to the combined length of two loaf fractions, the machine D having, in turn, a discharge conveyer 12 extending longitudinally rearwardly over, and in spaced relation from, the switching mechanism C and provided at its rear or discharge end with a flat receiving shell or platform 13, upon which the successive multiple wrapped packages may accumulate for suitable removal and shipment, all as best seen in Figures 1 and 2.

The dead plate 10 allows the second or "trailing" section to catch up with the first or "leading" section, so that the loaf sections will be brought into realignment. Actually each of these realigned sections is separately pushed off the dead

plate 10 by the next on-coming loaf-fraction, but the conveyers are so timed that this happens to both fractions before they are picked up by one of the flights of the intake conveyer 11, so that the fractions are moved into the wrapper D in realigned "full-loaf" relation so to speak.

In use and practice, the unwrapped and unsliced full length bread loaves L are suitably disposed upon the feed conveyer 1 of the slicing machine A and progressed through the slicing mechanism 2 to the fractionating transfer conveyer 3, which operates to first divide the successive sliced loaves into, in the present instance, two equal fractions *l* and to then deliver such fractions in a consecutive series across the dead plate 4 to the intake conveyer 5 of the wrapping machine B.

In the machine B, the individual fractions *l* are wrapped and delivered by the discharge conveyer 6 to the switching mechanism C, which latter operates and functions to re-align every successive two loaf fractions into end to end or axial pair-relation.

The so re-aligned pairs of loaf fractions *l* are successively delivered across the dead plate 10 to the intake conveyer 11 of the second wrapping machine D, by which the each successively delivered loaf-fraction pair is wrapped as a unit in a double-section multiple wrapped package and the packages P delivered, in turn, by the conveyer 12 upon the platform or plate 13 for removal.

With reference now to the method of practicing arrangement of Figures 3 and 4, A' is a slicing machine having a feed conveyer 14, slicing mechanism 15, and a fractionating transfer conveyer 16, all preferably constructed in accordance with the disclosures of said previously filed copending patent application and letters patent. Operatively disposed at the rear or discharge end of the transfer conveyer 16, is the laterally presented intake conveyer 17 of a first or so-called primary wrapping machine B', which, at its forward or discharge end, is provided with a discharge conveyer 18 longitudinally extending forwardly over and in upwardly spaced relation from the slicing machine A', as shown.

Operatively mounted in the plane, and at the forward or discharge end, of the conveyer 18, is a switching mechanism C', a dead plate 19, and an intake conveyer 20 of a second or so-called secondary wrapping machine D', all operatively associated in a manner fully and particularly described in Letters Patent No. 2,289,943, issued on July 14, 1942, to Walter A. Thum for Article handling machinery.

The initially unsliced loaves L, on being passed through the slicing means 15, are each divided into, in the present instance, two fractions *l*, *l'*, which are shifted axially away from each other and disposed into consecutive alignment by the fractionating transfer conveyer 16 and consecutively discharged into the pockets of the conveyer 17 for delivery into the primary wrapping machine B', by which each of said fractions is individually or separately wrapped. The so wrapped fractions *l*, *l'*, are then conveyed in consecutive order by the discharge conveyer 18 to the switching mechanism C', by which each successive two fractions are shifted again into axial alignment or normal loaf-forming relationship and in such re-aligned relation conveyed by the intatke conveyer 20 into the second wrapping machine D', by which each succeeding pair of separately wrapped fractions is wrapped in an outer wrap in the formation substantially of a double wrapped fractionally divided full loaf, and the packages P' delivered, in turn, by the conveyer 12' upon the platform or plate 13' for removal.

Again, with reference now to Figures 5 and 6, A^2 is a slicing machine having a feed conveyer 21, slicing means 22, and a fractionating transfer conveyer 23. The whole or unsliced loaves L, on being fed through the slicing means 22, are each subdivided into a pair of fractions *f*, *f'*, and delivered upon the conveyer 23 and by which some of such fractions, as the fractions *f*, are successively discharged first on to a dead plate 23' and then upon a straight-run forwardly extending and upwardly inclined carry-over conveyer 24 to a second dead plate 24' and then delivered to the intake conveyer 25 of a so-called secondary wrapping machine D^2. Meanwhile the other loaf fractions *f'* are successively shifted axially away from the fractions *f* and delivered by the conveyer 23 upon the laterally extending intake conveyer 26 of a so-called primary wrapping machine B^2, by which such fractions *f'* are successively separately wrapped and then delivered by a forwardly extending discharge conveyer 27 upon a second laterally extending conveyer 28 and by the latter conveyed successively to and upon a dead plate 28' and then upon the conveyer 25 and into re-coaxial alignment with the separate, and as yet unwrapped, fraction *f*. The successive pairs of so re-aligned or end-to-end disposed fractions, each pair now comprising an unwrapped fraction *f* and a wrapped fraction *f'*, are now by the conveyer 25 fed into the wrapping machine D^2 and by such machine wrapped as a single full length loaf. From the machine D^2, the successive packages, each now including an outer wrap enclosing one unwrapped loaf fraction *f* and one wrapped loaf fraction *f'*, are, in turn, conveyed for removal by a conveyer 28' upon a discharge table, or the like, 28'', as shown.

Figure 7 illustrates a spaced economizing and compact method practicing machine arrangement, which includes a slicing machine A^3 having a rearwardly extending feed conveyer 29, slicing means 30, and a rearwardly extending transfer conveyer 31. Operatively mounted at the discharge end of the transfer conveyer 31, is an elevating mechanism 32 comprising a pair of spaced pulleys 33, 34, reeved about which is an endless conveyer belt 35 provided with a series of swingable plates 36 each having an inwardly projecting foot 37 for engagement during upward loaf-elevating movement of the belt 35 with a guide track 38. Operatively mounted in juxtaposition to the upper limit of travel of the elevating plates 36, is a reciprocatory push or pull off arm 39 actuable in timed relation with the elevating mechanism 32, all as best seen in Figure 7.

Also operatively mounted adjacent the upper limit of travel of the elevating conveyer 35 and longitudinally extending forwardly over the slicing machine A^3, is a straight-line conveyer 40 for successively delivering the sliced bread loaves or loaf fractions, as the case may be, into the intake conveyer 41 of a wrapping machine B^3 for delivery, in turn, by a conveyer 41' onto a discharge plate 41'' for removal.

In Figures 8 and 9, A^4 is a loaf-slicing machine having an intake conveyer 42, slicing means 43, and a rearwardly extending fractionating transfer conveyer 44 adapted for simultaneously shifting the loaf fractions in co-axial pair alignment along separate paths, as at *p*, *p'*, Figure 8. The loaf fraction *p'* moving along one of the paths will directly discharge onto a longitudinally rear-

wardly extending intake conveyer **45** of a so-called primary wrapping machine B^4, while the loaf fractions p moving along the other path will be shifted onto a laterally extending auxiliary transfer conveyer **46** for discharge by mechanical means **46'** onto the intake conveyer **47** of another so-called primary wrapping machine B^5, the conveyer **47**, as best seen in Figure 8, longitudinally extending rearwardly in spaced parallel relation to the conveyer **45** of the machine B^4. The wrapping machine B^4 has a forwardly extending discharge conveyer **48** for delivering the wrapped loaf fractions p' to one side of the intake conveyer **49** of a so-called secondary wrapping machine D^4, while the other primary wrapping machine B^5 has a similar forwardly extending discharge conveyer **50** for delivering the wrapped loaf fractions p to a laterally extending auxiliary discharge conveyer **51**, by which latter the loaf fractions p are shifted to and upon the dead plate **51'** and then to the other side of the intake conveyer **49** into respective co-axial full loaf-forming alignment with the loaf fractions p' which have been delivered upon the intake conveyer **49** by the other discharge conveyer **48**, each pair of wrapped fractions p, p', being again by the machine D^4 wrapped endwise together in single loaf relation and delivered by a conveyer **51'** upon a discharge plate **51''** for removal.

In the multiple composite loaf package machine arrangement shown in Figures 10, 11, 12, A^5 is a loaf slicing machine which includes a feed conveyer **52**, slicing mechanism **53**, and a fractionating rearwardly extending transfer conveyer **54**. Disposed horizontally over the conveyer **54** and extending transversely across the discharge side of the slicing mechanism **53**, is a delivery plate **55** having a rearwardly projecting tongue or hold-back portion **56** extending longitudinally outwardly over the transfer conveyer **54** and having a transverse dimension substantially the same as half the length of the delivery plate **55** so as to extend substantially from the mid point to one side margin thereof, all as best seen in Figure 10. Operatively mounted on the framework of the slicing mechanism **53**, is an outwardly projecting lug **53'** for swingably supporting a conventional hold-down plate h, also as best seen in Figure 10.

The transfer conveyer **54** is further provided with a pair of side guides **57** each having an inwardly extending oblique portion **58**. Also supported over the transverse conveyer **54** intermediate the side guides **57**, is a center guide having a rearwardly extending free-swinging switch guide **59**, the transfer conveyer **54** being also provided with a plurality of conventional chain-driven flight bars **60**, all as best seen in Figure 10 and for purposes presently fully appearing.

Operatively mounted at the discharge end of the transfer conveyer **54**, is the conventional laterally extending intake conveyer **61** of an initial or so-called primary wrapping machine B^6 adapted for wrapping loaf fractions and provided at its discharge end with a delivery conveyer **62** longitudinally extending forwardly in spaced parallel relation to the conveyers **52**, **54**.

Operatively mounted at the discharge end of the conveyer **62**, is a fraction re-aligning mechanism C^5, a dead plate **63**, and an intake conveyer **64** operatively associated with a secondary wrapping machine D^5 preferably constructed and operatively associated in a manner more fully disclosed and described in said Thum Letters Patent No. 2,289,943.

If, for example, it should be desired to prepare a composite package containing a half fraction of whole wheat bread and a half fraction of white bread, a plurality of full unsliced white loaves X may be placed upon the slicing machine feed conveyer **52** in alternate sequence with full unsliced whole wheat loaves Y. The loaves X, Y, are successively fed through the slicing mechanism **53** and issue upon the delivery plate **55** and each loaf divided into component fractions x, x', and y, y', respectively. As will be seen by reference to Figures 10 and 11, the one fraction x of the first white loaf X will move directly down upon the transfer conveyer **54** in front of an oncoming flight rod **60**. This fraction x is manually removed, so that the first loaf fraction to be deposited upon the transfer conveyer **54** will be the succeeding whole wheat fraction y. Meanwhile the white fraction x' will have moved forwardly over the tongue or hold-back plate **56** and will be deposited in front of the next succeeding flight rod **60**.

Following the deposition of the fraction x', a subsequent white fraction x and thereafter a subsequent whole wheat fraction y' will be successively deposited for the ultimate formation of a second composite loaf.

As will also be seen in Figure 10, this operates so as to feed the white loaf fractions x, x', into the pockets of the intake conveyer **61** in "heel to heel" relationship. Similarly the whole wheat loaf fractions y, y', are also fed to the intake conveyer in "heel to heel" relationship. Thus, in every instance, the two loaf fractions which follow each other consecutively with their respective or open soft ends in adjacent proximity will always be a pair consisting of one white fraction x and one whole wheat fraction y' or conversely one white fraction x' and one whole wheat fraction y. The fractions x, x', y, y', are separately wrapped in the primary wrapping machine B^6 and are fed by the delivery mechanism **62**, to the switching mechanism C^5, by which latter the loaf fractions are deposited upon first one side and then the other side of the dead plate **63**, each loaf fraction being, in turn, pushed from the dead plate **63** to the intake conveyer **64** of the secondary wrapping machine D^5 by an oncoming loaf fraction. The switching mechanism C^5 is so timed with relation to the movement of the intake conveyer **64**, so that a loaf fraction x and a loaf fraction y' or a loaf fraction x' or a loaf fraction y, as the case may be, are deposited in axially aligned or end-to-end loaf-forming relationship upon the intake conveyer **64** for ultimate disposition by the machine D^5 within an outer wrapping in the formation of an outer wrapped and packaged composite loaf comprising a pair of also separately wrapped different loaf fractions.

If it is desired to omit the elongated tongue **56** of the delivery plate **55** and operate the transfer conveyer **54** for simple loaf fractionation, then composite packaging may be achieved simply by removing the first loaf fraction x, for instance, as it is delivered into the switching mechanism C^5, and, at the same time, retarding for one half cycle the forward movement of the intake conveyer **64** of the secondary wrapping machine D^5. Under such circumstances, it will be seen that initially a white fraction x' will be deposited on one side of the dead plate **63** and then a whole wheat fraction y will be deposited on the other side of the dead plate **63**, forming a composite loaf. The two fractions x', y, will be suc-

cessively pushed off the dead plate 63 into the delayed intake conveyer 64 for disposition in an outer wrapper, as above described.

Thus the baker is enabled to most economically, conveniently, and speedily wrap and double wrap loaf fractions for commercial delivery by the baker to consumers in a manner conserving the freshness and tastiness of the loaf, and it should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the method practicing machine arrangements may be made and substituted for those herein shown and described without departing from the nature and principle of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. An article handling machine comprising a table, a conveyer for progressing the articles over the table in a consecutive series one behind the other in which the axes of the respective articles are in spaced parallel relation, a dead plate extending across the end of the conveyer in forwardly spaced relation thereto, means for shifting the progressed articles transversely to their initial path of travel for arrangement upon the dead plate in consecutive groups of axially aligned articles, and a second conveyor operable in timed relation to the first conveyer for progressing the series of axially aligned groups.

2. In bread-handling mechanism, first, second, and third conveyers arranged in successive order, an intake plate between the first and second conveyers, and a discharge plate between the second and third conveyers, said first conveyer including means for depositing a single loaf-fraction on the intake plate in such manner that each such fraction will push the previously deposited fraction upon the second conveyer, said second conveyer including fraction-progressing means and fraction-shifting means co-operably associated for depositing a plurality of fractions upon the discharge plate in an axially aligned group in such manner that each such group will push the previously deposited group upon the third conveyer, and said third conveyer including means for progressing the deposited fraction groups away from the point of deposition prior to the deposition of a succeeding group.

3. In bread-handling mechanism, first, second, and third conveyers arranged in successive order, an intake plate between the first and second conveyers, and a discharge plate between the second and third conveyers, said first conveyer including means for depositing a single loaf-fraction on the intake plate in such manner that each such fraction will push the previously deposited fraction upon the second conveyer, said second conveyer including fraction-progressing means and fraction-shifting means co-operably associated for depositing a plurality of fractions upon the discharge plate in an axially aligned group in such manner that each such group will push the previously deposited group upon the third conveyer, and said third conveyer including means for progressing the deposited fraction groups away from the point of deposition in timed relation to the operation of the fraction-progressing means of the second conveyer.

4. In bread-handling mechanism, first, second, and third conveyers arranged in successive order, an intake plate between the first and second conveyers, a discharge plate between the second and third conveyers, said first conveyer including means for depositing a single loaf-fraction on the intake plate in such manner that each such fraction will push the previously deposited fraction upon the second conveyer, said second conveyer including fraction-progressing means and fraction-shifting means co-operably associated for depositing a plurality of fractions upon the discharge plate in an axially aligned endwise spaced group in such manner that each such group will push the previously deposited group upon the third conveyer, and said third conveyer including means for progressing the deposited fraction groups away from the point of deposition prior to the deposition of a succeeding group, and means co-operable with the third conveyer for shifting the fractions of each group axially toward each other into endwise abutment.

5. In article handling mechanism, a transfer conveyer, a wrapping machine intake conveyer extending forwardly from the transfer conveyer as a continuation thereof, a dead plate interposed between the two conveyers, a pair of spaced parallel chains provided with spaced parallel flight rods extending therebetween, said chains being operatively mounted on and movable along the transfer conveyer for engaging a group of consecutively aligned articles, switching means co-operable with the transfer conveyer for depositing said articles in spaced axial alignment upon the dead plate for transference as a group to the intake conveyer, and chain-driven flight rods and converging side guides associated with the intake conveyer for shifting the spaced axially aligned articles into endwise abutment.

6. In article handling mechanism, a first table and means for progressing articles thereacross, a second table and means for progressing articles thereacross, said second table being disposed in endwise alignment with the first table, a dead plate interposed between the first and second tables, a pair of spaced parallel chains provided with spaced parallel flight rods extending therebetween, said chains being operatively mounted on and movable along the first table for receiving a group of consecutively aligned articles, switching means co-operable with the flight rods for depositing said articles in spaced axial alignment upon the dead plate for transference as a group to the second table, chain-driven flight rods and converging side guide members associated with the second table for shifting the spaced axially aligned articles into endwise abutment, and means for driving the article-progressing means of the first and second tables in timed relationship.

7. In article handling mechanism, a transfer conveyer having means for engaging and progressing a group of consecutively aligned articles, a wrapping machine intake conveyer extending forwardly from the transfer conveyer as a continuation thereof, a dead plate interposed between the two conveyers, switching means co-operable with the transfer conveyer for depositing said articles in spaced axial alignment upon the dead plate for transference as a group to the intake conveyer, article-progressing means operatively associated with the intake conveyer, and converging side guides mounted on the intake conveyer for co-operation with the article-progressing means thereof for shifting the spaced axially aligned articles into endwise abutment.

ELIZABETH PAPENDICK,
Executrix and Residuary Heir of the Estate of Gustav C. Papendick, Deceased.