Oct. 19, 1948. G. A. KIHN 2,452,014

DUPLEX PACKAGE AND METHOD OF MAKING THE SAME

Filed Aug. 9, 1944 2 Sheets-Sheet 1

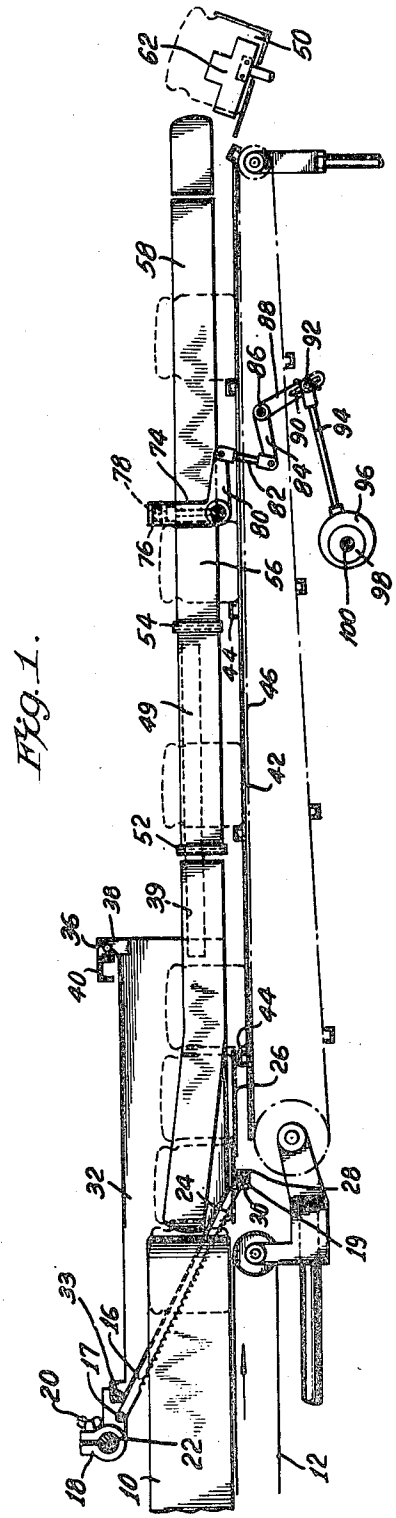


Fig. 1.

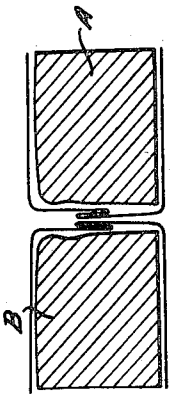


Fig. 5.

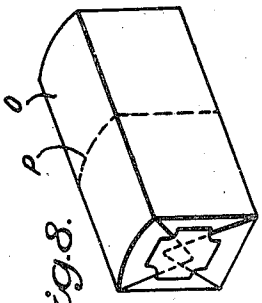


Fig. 8.

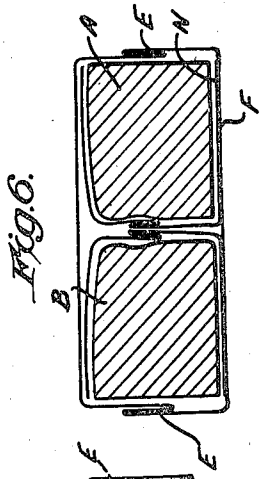


Fig. 6.

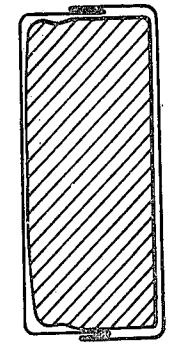


Fig. 4.

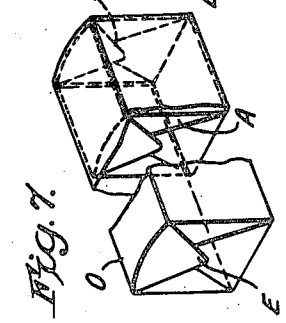


Fig. 7.

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DUPLEX PACKAGE AND METHOD OF MAKING THE SAME

Filed Aug. 9, 1944 2 Sheets-Sheet 2

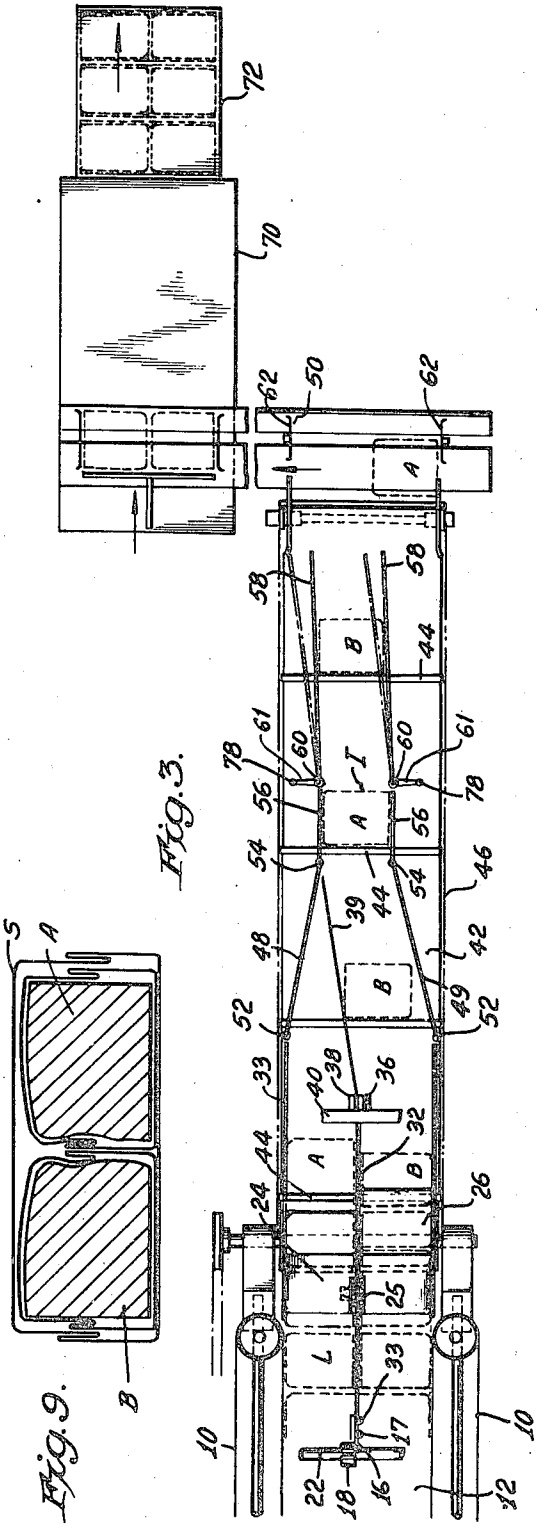


Fig. 3.

Fig. 9.

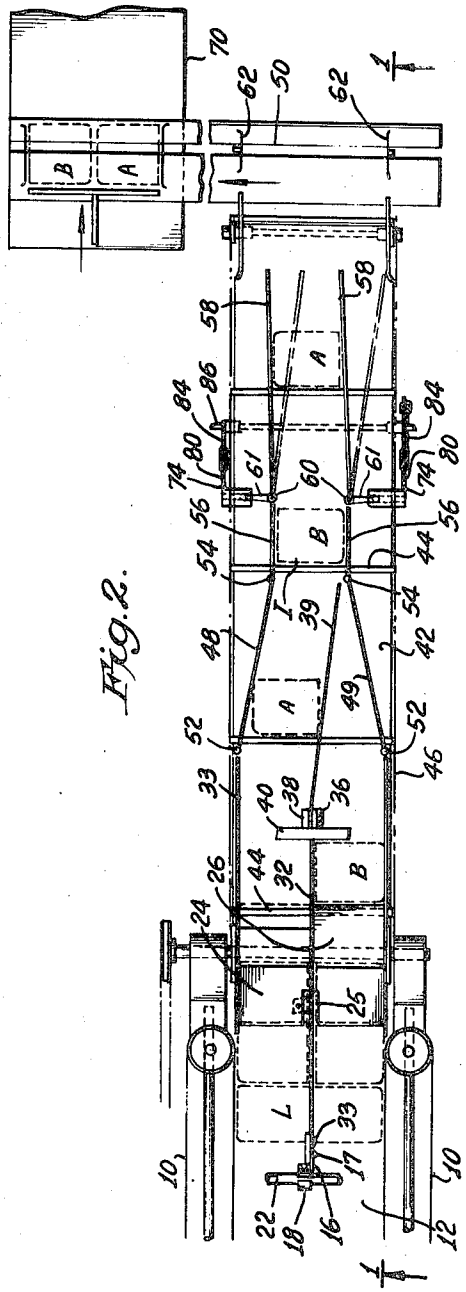


Fig. 2.

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UNITED STATES PATENT OFFICE

2,452,014

DUPLEX PACKAGE AND METHOD OF MAKING THE SAME

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9 Claims. (Cl. 99—173)

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This invention relates to novel bakery packages and to methods of forming such packages, especially in connection with the wrapping of loaves of bread. As is well known in the trade loaves of bread are more or less irregular even though attempts are made to maintain general uniformity in length, width and height in baking any particular batch of bread. However, despite all precautions the ends or "heel" portions are usually more or less irregular and may slope, curve or even overhang as a result of operations incident to preparation, and baking.

It is evident, therefore, that when articles such as loaves of bread or the like are wrapped, difficulty may be experienced in forming end folds and securing the same relative to the ends of the articles being wrapped. Accordingly it is difficult to obtain packages which are substantially uniform in appearance, especially insofar as the end folds are concerned.

The present invention seeks to overcome some of the disadvantages mentioned above in wrapping bread, and at the same time provide a novel package which has greatly improved end folds and, therefore, better sales appeal.

According to my method a loaf of bread, whether sliced or unsliced, is separated into at least two uniform halves which are rearranged in axial alignment such that the center portions become the ends of the loaf, and the ends of the rearranged loaf are located in juxtaposition. When such rearranged loaf halves are passed through a wrapping machine, it is obvious that the ends which are substantially uniform in cross section present a flat folding surface, and accordingly excellent appearing end folds are made with considerable ease.

I have also found that a very satisfactory double package may be formed by separating a wrapped loaf of bread into two substantially equal parts and rearranging the parts in axial alignment such that the wrapped ends of the loaf parts are in juxtaposition and the exposed loaf portions become the new ends of the reassembled partially wrapped loaf. The reassembled partially wrapped loaf may then be wrapped either by hand or any suitable wrapping machine and sealed to complete the wrapping in forming a composite loaf package.

I have also found that an extremely pleasing and satisfactory loaf results from associating wrapped loaf halves in axial alignment with heel portions in juxtaposition and the former center portions forming the new ends of the wrapped loaf assembly. Because of this arrangement and the fact that the shape and surface areas of the

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new ends of the loaf formed by two wrapped sections are substantially the same, great uniformity in the finished package results. The end folds of the outer wrapper are more regular and lie flatter against the flat cut faces of the loaf assembly.

If desired the portion of the wrapper constituting the top of the composite package formed by wrapping sliced or unsliced, wrapped or unwrapped, loaf sections reassembled as described hereinabove, may be provided with perforations or there may be employed tear strips in order to assist in breaking the package into two sections when the bread is being consumed.

Also, during the wrapping operation incident to wrapping reassembled partially wrapped loaf sections, and especially in the heat sealing of the several folds and the bottom seam, the bottom seam of the outer wrapper tends to become firmly sealed, by means of the thermoplastic sealing mediums on the wrapper, to the bottoms of the wrappers of the partially wrapped sections, and in this way each of the end to end axially aligned loaf sections is securely held within the outer wrapper so that when the loaf is broken apart, each section remains completely wrapped.

Due to the fact that the end flaps can be folded with great ease against the flat surface which formerly constituted the inner portion of the loaf, this method adapts itself very satisfactorily to the application of end labels which can be easily located and applied to the end folds of the composite package.

It is, therefore, an object of my invention to provide an improved bakery article package and method for forming the same.

It is a further object of my invention to provide an improved bakery package such as a wrapped loaf of bread and method for forming the same wherein a sliced or unsliced, wrapped or unwrapped loaf of bread is divided into at least two parts which are arranged in axial alignment with the ends or "heel" portions in contact one with the other and then wrapped to form more uniform packages because of the fact that the parts of the article constituting the ends of the reassembled or composite article in the case of partially wrapped loaf sections are substantially uniform in cross section, thereby making possible the formation of more uniform and better appearing end folds.

The invention is further characterized by the provision of a novel bakery package such as a wrapped loaf of bread, and a method for forming the same wherein a completely wrapped loaf of

bread is divided into at least two parts which are arranged in axial alignment with the end flaps in juxtaposition, then wrapping the reassembled loaf in a second or outer wrapper and sealing the end flaps and bottom seam.

The invention further consists in the provision of a new bakery product such as a loaf of bread provided with an inner and an outer wrapper in which the inner wrapper constitutes a partial wrapping and the outer wrapper constitutes a complete wrapping for the loaf wherein when the package is opened each loaf section remains a completely wrapped unit.

A further object of the invention is to provide a composite wrapped bakery article wherein a completely wrapped loaf of bread is divided into at least two parts which are aligned in axial alignment with the wrapped ends in engagement after which an outer wrapper is applied thereto and end flaps are formed over the substantially uniform ends of the reassembled loaf and the flaps and bottom seam are heat sealed to complete the wrapping of the package.

The invention also consists in securing the outer wrapper to the inner wrapper along the bottom portions thereof in order that when the two sections are broken apart when the product is consumed, each section will form a completely wrapped half loaf.

While the preferred embodiment of the invention has been shown and described, it is to be understood that the invention is not confined to the specific method steps and the details of the construction of the apparatus for carrying out the method herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

In the accompanying drawings which form a part of this specification, and wherein the several reference characters designate the same or like elements:

Figure 1 is a diagrammatic side sectional elevation taken on line 1—1 of Figure 2;

Figure 2 is a diagrammatic plan view of the mechanism shown in Figure 1;

Figure 3 is a view somewhat similar to that shown in Figure 2 indicating diagrammatically the transit of loaf assembly to and through a conventional wrapping machine;

Figure 4 is a sectional, diagrammatic view showing a wrapped loaf;

Figure 5 is a diagrammatic, sectional view of a wrapped loaf cut in two, reassembled in axial alignment and with the end fold portions of the loaf parts in juxtaposition prior to final wrapping;

Figure 6 is a diagrammatic view of the loaf assembly of Figure 5 wrapped;

Figure 7 is a perspective view broken away to show the general arrangement of the inner and outer wrappers;

Figure 8 is a perspective view of a completed composite package of a wrapper enclosed partially wrapped or unwrapped, sliced or unsliced loaf having end labels affixed to the end folds of the enclosing wrapper; and

Figure 9 is a sectional diagrammatic view showing two fully wrapped loaf components arranged with heel ends in juxtaposition enclosed in an outer wrapper.

Figures 1, 2 and 3 are diagrammatic views illustrating somewhat schematically, suitable

mechanism for carrying out a preferred form of my invention. As shown, leaves L are moved by means of side conveyors 10 and bottom conveyor 12 driven in any suitable manner from a wrapping machine (not shown) past a loaf divider or separator, such as a stationary knife 16 inclined with respect to the path of travel of each loaf being split into two portions. Knife 16 may be provided with a serrated edge in the usual manner. The upper end of knife 16, as indicated in Figure 1, may be secured by means of a screw 17 to a clamp 18 provided with a wing nut adjustment 20 for adjustably securing the clamp on a cross shaft 22 suitably mounted in the side frames of the machine (not shown). The lower end of knife 16 is provided with an opening 19 thus enabling it to be mounted on a cross pin 28 carried by an angle bracket 30 fixed to the underside of the plate 24. Plate 24 may be provided with a slot 25 of a width sufficient to allow transverse adjustment of lower end of knife 16 in order to conform with the adjusted secured position of the upper end thereof on rod 22.

Coacting with knife 16 and in substantial alignment therewith is a vertical plate 32 having its rear end secured to clamp 18 by means of screw 33. As shown in Figure 1, the rear end of plate 32 is provided with an inclined face corresponding to the angle of inclination of knife 16 so that plate 32 in effect constitutes a continuation of knife 16, and loaves moving past knife 16 are maintained separated by plate 32 as they pass therealong enroute to conveyor 42, described hereinbelow. The front end of plate 32 is secured by means of a wing nut 36 to a clamp 38 fixed to a transverse bar 40 suitably mounted in the side frames of the machine (not shown). Fixed to the front end of plate 32 and extending substantially horizontally above conveyor 42 is an elongated flat vertical spring member 39 which constitutes a flexible extension of plate 32 and assists in alternately shifting a succession of partially wrapped or unwrapped, sliced or unsliced loaf sections A and B as they are transported along guide plate 42 enroute to the infeed conveyor 50 of the bread wrapping machine designated generally 70 (Figure 3).

Loaves advanced by conveyors 10, 12 may be either partially wrapped or unwrapped, sliced or unsliced according to the demands of customers of the baking establishment. The succession of divided loaves of bread moving past knife 16 and plate 32 travel onto bottom support plates 24, 26 suitably secured to the side frames of the machine (not shown). These plates may be constructed and arranged much in the general manner shown in Papendick Patent No. 2,247,699, issued July 1, 1941. As indicated in Figures 1, 2 and 3, divided loaf sections designated A and B, slide along plates 24, 26, and drop therefrom onto elongated guide plate 42.

Plate 24 is so arranged with respect to plate 26 that a loaf section A will drop onto guide plate 42 in advance of a loaf section B in front of a flight 44 fixed to spaced endless chain conveyors 46. As indicated in Figure 1, a flight 44 moves into engagement with a loaf section A or B, as such section drops from either plates 24 or 26 and awaits delivery thereby along plate 42 to the infeed conveyor 50 of the wrapping machine 70.

For example, in Figure 3, a loaf section A, either partially wrapped or unwrapped resulting from movement of loaves L past knife 16 and plate 32 has dropped from plate 24 and will be moved forward by the next flight 44. Continued

forward travel of flight 44 causes the loaf section A to advance between flexible plate 39 and side guide plate 33 in such a way that as the loaf section engages side guide plate 48 fixed to vertical studs 52 and 54, flexible plate 39 yields and delivers loaf section A to the position indicated as position I in Figure 3 between two spaced plates 56 secured to vertical studs 54. Further forward advance of loaf section A results in it being moved between two pivoted swingable plates 58 mounted on studs 60, which studs have secured thereto levers 61 which may be operated by suitable means (described hereinbelow) to shift plates 58 in unison to the positions shown in broken lines in Figures 2 and 3 in order to deliver first, a loaf section A, and then a loaf section B in proper end to end relation upon infeed conveyor 50 between gripping flights 62 thereof for delivery into the wrapping machine.

In a similar manner after a loaf section A has been advanced by one of the flights 44 of conveyor 46, the next loaf section to be moved by the following flight 44 will be a section designated B which drops off plate 26 in the path of movement of the next flight 44. This section B is moved between flexible plate 39 and side guide plate 49 attached to studs 52, 54 mounted in any suitable manner along the path of travel of loaf sections, as indicated in Figure 2. Loaf sections B are advanced alternately to position I and disposed on infeed conveyor 50 between clamping plates 62 thereof. In this way loaf sections A and B which may be partially wrapped (Figure 5) or unwrapped, sliced or unsliced loaf portions are reassembled in juxtaposition or general loaf arrangement and are ready to be moved onto the wrapping machine for final wrapping.

Suitable mechanism for shifting plates 58 transversely to the path of movement of loaf sections A and B is shown in Figures 1 and 2. Levers 74 are provided with channel portions 76 engaging cam followers 78 on levers 61. Levers 74 are also provided with arms 80 having pivotally attached thereto links 82 in turn connected to levers 84 fixed as shown in Figures 1 and 2, to a shaft 86 suitably mounted in the side frames of the machine (not shown). One of the levers 84 may be provided with an arm 88 provided with a slot 90, in which is adjustably secured a pin 92 to which is connected a pitman 94 connected to an eccentric strap 96 of an eccentric 98 on shaft 100 driven from the main drive of the machine (not shown). The timing of conveyor 46 and eccentric 100 is such that loaf sections are properly disposed between flights 62 as shown in Figures 2 and 3.

Figures 4, 5 and 6, indicate diagrammatically the sequence of steps involved. Figure 4 shows a wrapped loaf which may be sliced or unsliced, prior to being advanced by conveyors 10, 12 against knife 16 and past separating plate 32. Figure 5 shows the loaf sections A and B rearranged with the wrapper covered "heel" ends juxtapositioned and the sections A and B in substantial alignment. Figure 6 illustrates the arrangement of the loaf sections A and B when completely covered. In Figure 7 a perspective view of the elements constituting the completely wrapped composite loaf package is shown. It will be noted that because of the arrangement of the two loaf sections, the parts of the reassembled loaf which form the ends of the package are extremely uniform due to the fact that the new ends are substantially the same in cross section and any inequalities incident to proofing and baking are eliminated because of the repositioning of the pan ends of the loaf at the center and relocation of the center portions thereof to form the new loaf package ends. Figure 8 shows the same package as in Figure 7 with an end label. Because of the uniform and flat folds obtainable according to my invention, end labels are affixed with considerable ease and with a minimum of waste.

As shown in Figure 9, loaf sections can be completely wrapped and then reassembled with wrapped heel portions in juxtaposition and the wrapped center portions forming the new ends of the assembly to be enclosed in an outer wrapper S. The similarity in shape of the outer ends and the flat folding surface presented by the center portions of loaves makes possible the formation of end folds which are more regular, and lie flatter against the ends of the loaf assembly enclosed.

It is believed evident from the above that either sliced or unsliced, unwrapped loaves or wrapped loaves of sliced or unsliced bread can be reassembled with the pan ends thereof in juxtaposition as indicated in Figures 5 and 6 in order to form a more pleasing bread package wherein the ends are extremely uniform and the end folds can lie much flatter and assume a better fold arrangement, thus contributing to the sales appeal of each individual package. The package shown in Figures 7 and 8 may consist of sliced, unsliced halves of any desired type of bread, such for instance as all white, wholewheat, date or combinations of one-half of a wholewheat loaf associated with one-half of a white bread loaf or other desired assembly.

In the case of the novel double wrapped loaf package illustrated in Figures 4 to 7, inclusive, it is pointed out that considerable saving in wrapper results because of the fact that a much narrower sheet can be used in forming the package. This is because I have found that it is unnecessary to completely wrap each loaf section A or B before it is assembled into the juxtapositioned relationship of Figure 5 prior to final wrapping to produce the packages in Figures 6 and 7. A single fold arrangement and seal arrangement at the ends of the packages, shown in Figures 6, 7 and 8, furnishes all the protection necessary and eliminates the necessity of completely enclosing each section A and B. As the wrapped composite loaf packages pass through the wrapping machine 70 into delivery portions indicated generally at 72 thereof, the wrapper ends E and bottom F are heat sealed in known manner. The heat sealing of the bottom insures the bottom portion of the inner wrapper N being secured to the bottom portion F of the outer wrapper so that when the loaf is to be consumed and wrapped section A is broken apart from wrapped section B, the inner wrapper N partially enclosing each section A and B is firmly secured to the outer wrapper O, and there is little danger of the two wrappers becoming separated until they are pulled apart manually.

In order to assist in breaking the composite loaf package into two wrapped sections, the outer wrapper O may be provided with a perforation P for that purpose.

The invention above described may be varied in construction within the scope of the claims, for the particular device, selected to illustrate the invention, is but one of many possible concrete embodiments of the same. It is not, therefore,

to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. The method of forming a wrapped bakery article of the group consisting of sliced and unsliced loaves of bread which comprises completely wrapping said article and securing the wrapper about the same to form a wrapped package, then dividing said package into two substantially equal partially wrapped parts, each of said parts being enclosed within said wrapper except for one end, turning each of said parts end for end and bringing the fully wrapped ends thereof into contact to form a partially wrapped loaf assembly, then completely wrapping said assembly including folding the projecting wrapper ends about the exposed ends of each of said partially wrapped parts, and securing said wrapper about said assembly to form a completely wrapped composite package.

2. The method of forming a composite wrapped bakery package which comprises completely wrapping an elongated bakery product, and securing the wrapper about the same, then dividing said wrapped product into two substantially equal parts, said parts being completely wrapped except for one end of each part which results from the division of the original package, reassembling each partially wrapped part with the wrapped ends in juxtaposition and the exposed ends of the bakery product extending outward to form the ends of the reassembled partially wrapped product, then completely wrapping the reassembled partially wrapped parts to form a wrapped composite package.

3. The method of forming a composite package which comprises completely wrapping an elongated bakery product of the group consisting of sliced and unsliced bread, separating said wrapped loaf of bread approximately midway of its length to form two substantially equal partially wrapped loaf parts, each having one unwrapped end, and reassembling said partially wrapped parts with the wrapped ends in juxtaposition in substantial loaf formation, then wrapping said reassembled loaf to form said composite bakery package, including sealing the bottom portions of the inner and outer wrappers together.

4. The method of forming a composite package which comprises completely wrapping an elongated bakery product of the group consisting of loaves of bread and cake, separating said wrapped loaf approximately midway of its length to form two substantially equal wrapped loaf parts, each part having one unwrapped end, reassembling said parts with the wrapped ends in juxtaposition in substantial loaf formation and the inner unwrapped flat faces constituting the ends of the reassembled partially wrapped loaf, enclosing said reassembled loaf in a wrapper with the ends projecting beyond the unwrapped ends of said reassembled loaf parts, folding said extending wrapper portion about the ends of said loaf, sealing the same thereto, and affixing a label to each end of said final package.

5. A wrapped bakery product comprising a loaf of bread divided into two partially wrapped halves, the wrapped heel ends of said halves being located in juxtaposition, in substantially a loaf form assembly with the inner unwrapped faces thereof constituting the ends of said assembly uncovered by said inner wrapper, and an outer wrapper enclosing said assembly and securing said parts in loaf package formation.

6. A wrapped bakery product comprising a loaf of bread divided into two substantially equal halves, each half being completely enclosed in an inner wrapper having a thermoplastic coating, except for one end of each part which is uncovered, said halves being arranged in substantial loaf formation assembly with the wrapped heel ends juxtaposed and the unwrapped ends thereof presenting substantially flat uniform folding surfaces, and an outer wrapper encircling said assembly and secured thereabout.

7. A wrapped loaf of bread comprising a loaf of bread divided into two substantially equal halves, each half being completely enclosed in an inner wrapper having a thermoplastic coating, except for one end of each part which is uncovered, said halves being arranged in substantial loaf formation assembly with the wrapped heel ends juxtaposed and the unwrapped ends thereof presenting substantially flat uniform folding surfaces, and an outer wrapper encircling said assembly and secured thereabout, the bottom seam of said outer wrapper being adhesively secured to the complementary portions of said inner wrapper.

8. A wrapped bakery product comprising a loaf of bread divided into two substantially equal halves, each half being completely enclosed in an inner wrapper having a thermoplastic coating, except for one end of each part which is uncovered, said halves being arranged in substantial loaf formation assembly with the wrapped heel ends juxtaposed and the unwrapped ends thereof presenting substantially uniform flat folding surfaces, an outer wrapper encircling said assembly and secured thereabout, and end labels secured to the end folds of the outer wrapper.

9. A wrapped bakery product comprising a loaf of bread divided into two substantially equal halves, each half being completely enclosed in an inner wrapper having a thermoplastic coating, except for one end of each part which is uncovered, said halves being arranged in substantial loaf formation assembly with the wrapped heel ends juxtaposed and the unwrapped ends thereof presenting substantially flat uniform folding surfaces, an outer wrapper encircling said assembly and secured thereabout, the bottom seam of said outer wrapper being adhesively secured to the complementary portions of said inner wrapper, and end labels secured to the end folds of the outer wrapper.

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