

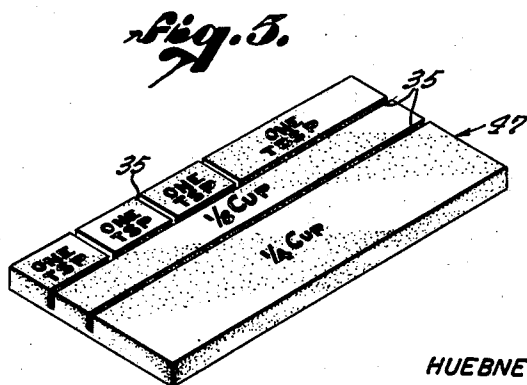
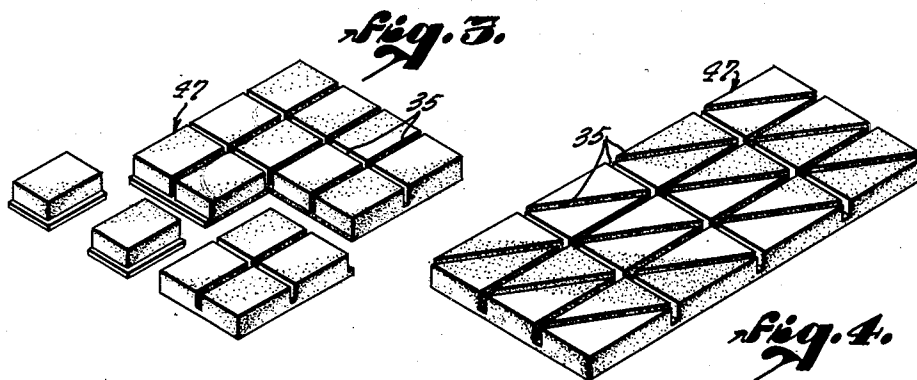
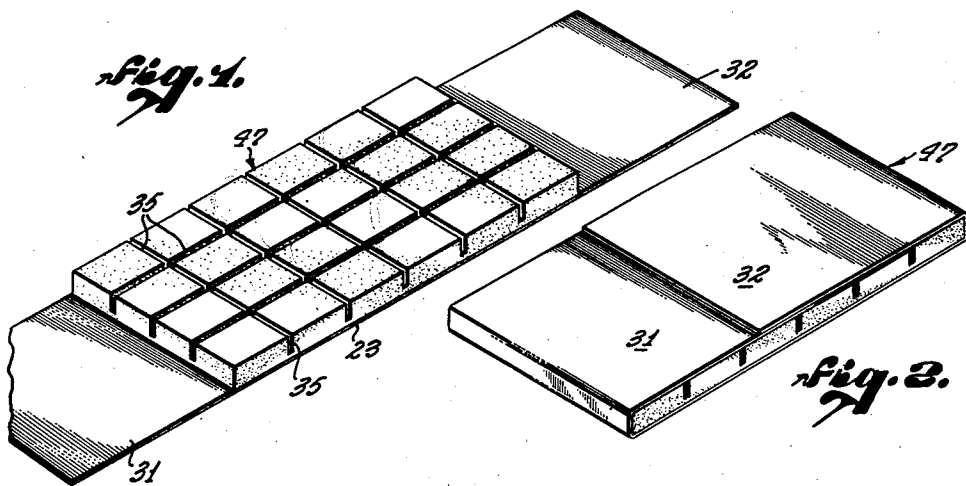
March 29, 1955

J. K. HEIDRICH ET AL
PACKAGING OF FATS

2,705,203

Filed Jan. 11, 1951

5 Sheets-Sheet 1



JAMES K. HEIDRICH &
CHARLES D. MULLINIX,
INVENTORS.

HUEBNER, BEEHLER, WORREL & HERZIG,
BY ATTORNEYS.

Leibert A. Huebner

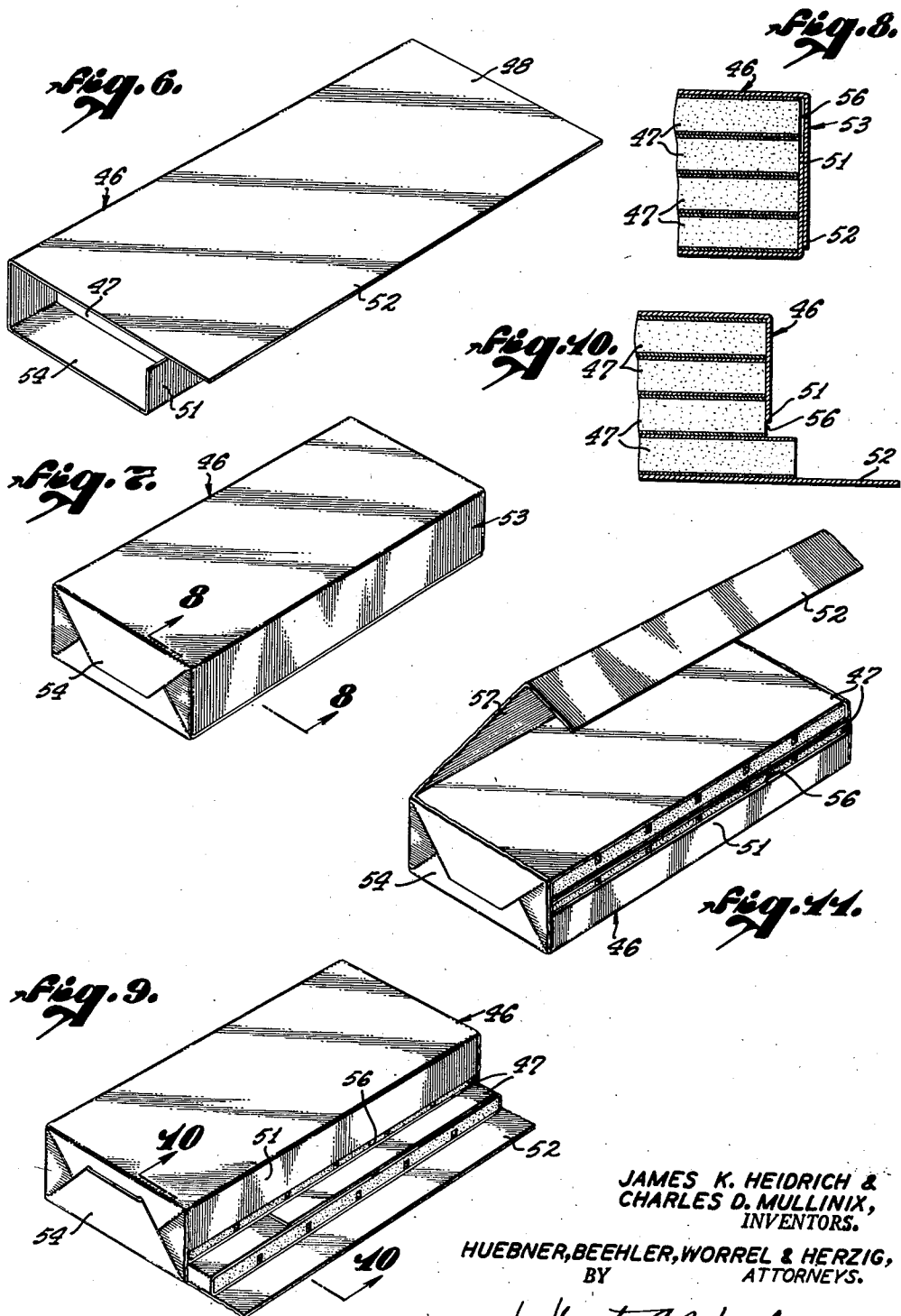
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5 Sheets-Sheet 2



JAMES K. HEIDRICH &
CHARLES D. MULLINIX,
INVENTORS.
HUEBNER, BEEHLER, WORREL & HERZIG,
BY
ATTORNEYS.

Herbert A. Huebner

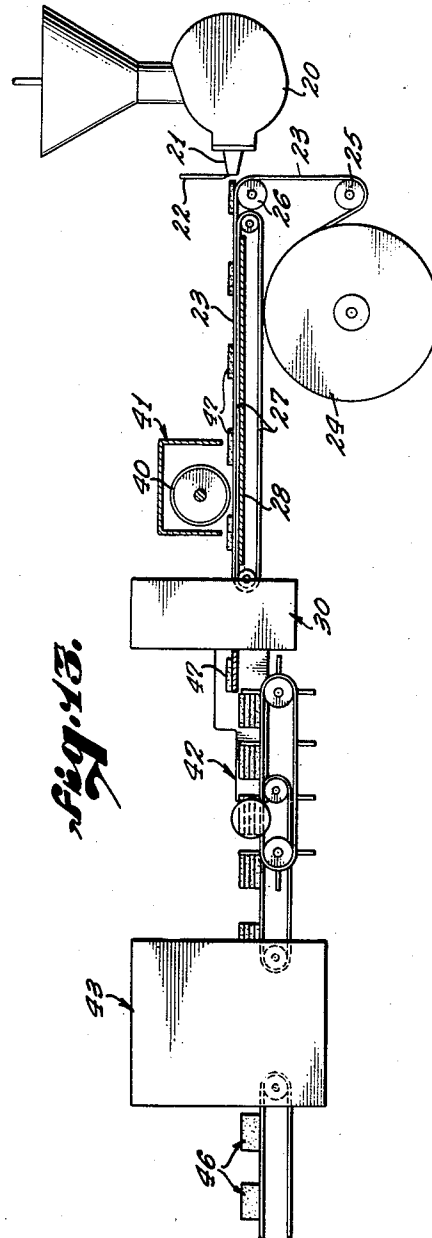
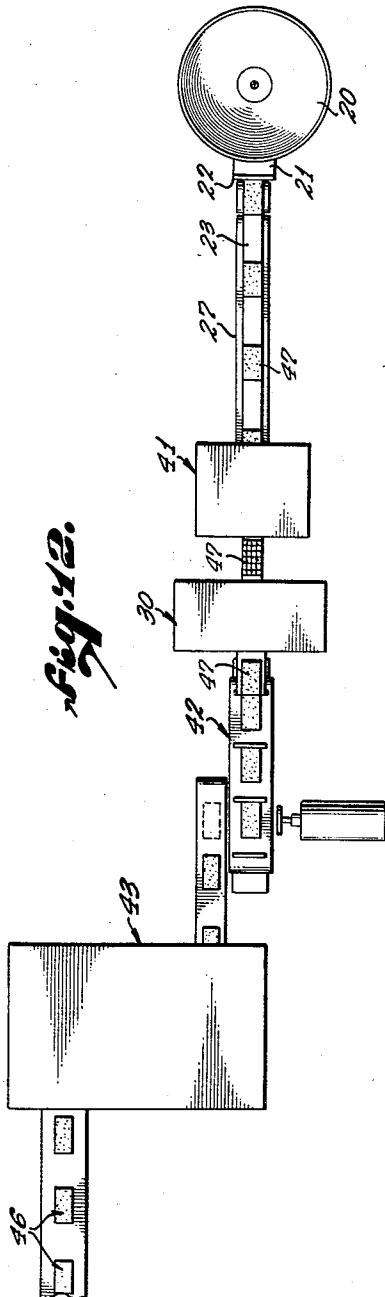
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5 Sheets-Sheet 3



JAMES K. HEIDRICH &
CHARLES D. MULLINIX,
INVENTORS.

HUEBNER, BEEHLER, WORREL & HERZIG,
BY ATTORNEYS.

Leibert A. Huebner

March 29, 1955

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5 Sheets-Sheet 4

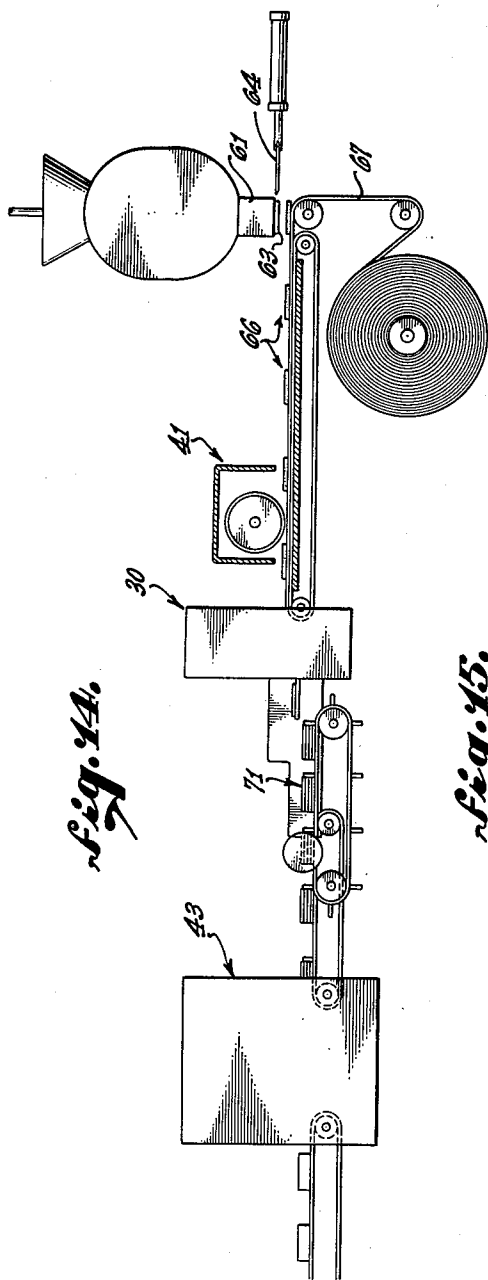


Fig. 14.

Fig. 15.

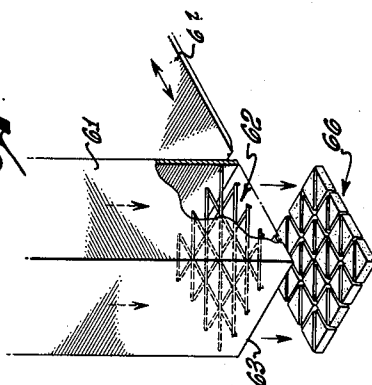
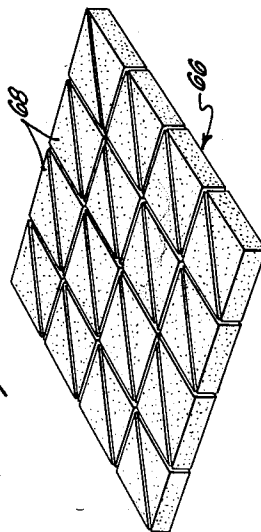


Fig. 16.



JAMES K. HEIDRICH &
CHARLES D. MULLINIX,
INVENTORS.
HUEBNER, BEEHLER, WORREL & HERZIG,
BY ATTORNEYS.

Robert A. Huebner

March 29, 1955

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5 Sheets-Sheet 5

Fig. 17.

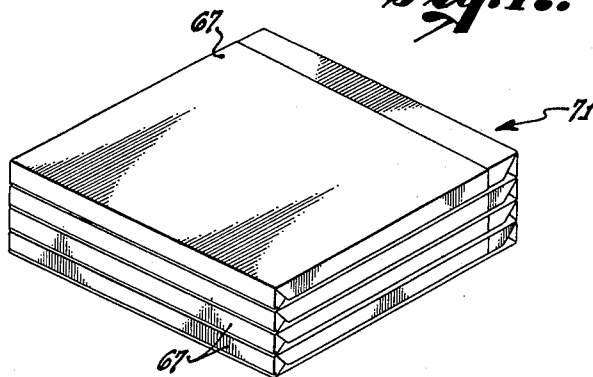


Fig. 18.

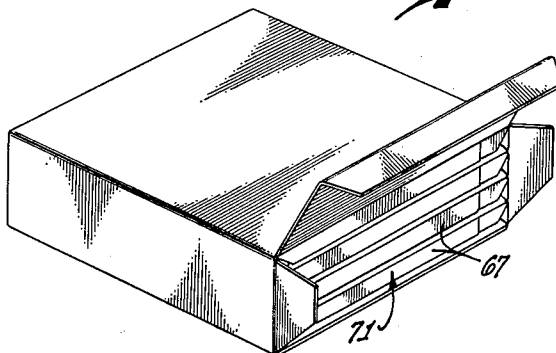
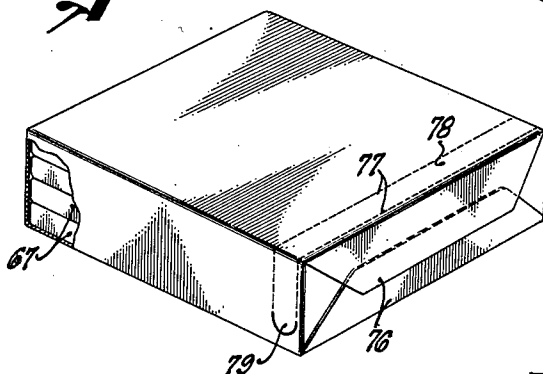


Fig. 19.



JAMES K. HEIDRICH &
CHARLES D. MULLINIX,
INVENTORS.

HUEBNER, BEEHLER, WORREL & HERZIG,
BY ATTORNEYS.

Robert A. Huebner

1

2,705,203

PACKAGING OF FATS

James K. Heidrich and Charles D. Mullinix, Cincinnati, Ohio; said Heidrich assignor to said Mullinix

Application January 11, 1951, Serial No. 205,444

7 Claims. (Cl. 99-179)

This invention relates to the packaging of fat products such as margarine, and has particularly efficacious use in the packaging of shortening both vegetable and animal. Essentially the package comprises a plurality of layers of margarine or shortening formed into relatively thin rectangular or square slabs of a quarter pound each. Each slab is scored or embossed into a plurality of patties and then wrapped completely, or partially, in a grease-proof paper or other suitable wrapping sheet. The slabs are stacked one on top of another and the stack, generally of four slabs, is packaged within a suitable outer wrapper, which may be of the heat sealed type. The outer wrapper is preferably so designed that the slabs may be slid one by one from a slot in the open package. The outer wrapper or package may be of the Western style margarine carton, or may be of the style known as the Eastern flat type, or may alternatively be of any shape convenient for marketing.

This invention has particular application to the consumer marketing of margarine or shortening and other fat products which tend to de-emulsify or separate when melted. The present method of use of shortening is well known; the cook merely spoons out of the can an estimated measure of shortening, hoping that the estimate is close enough to produce satisfactory cooking results. Any effort to achieve an accurate measure by melting or liquefying the product tends to de-emulsify it with consequent spoilage for cooking use. It is accordingly an important object of this invention to provide a fat product, particularly shortening (or margarine, which also separates upon heating) in scored slabs so that accurately premeasured amounts of fat may be readily broken off. Thus, the housewife may conveniently break off exactly the desired measure of fat without any danger of spoiling the product by heating in order to obtain accurate measure.

By thus segmenting the fat product the manufacturer is given a convenient place to mark each slab or each scored patty in the slab with the vitamin content of the slab and thereby enhance the saleability of the product, particularly margarine. In similar vein, an advertising slogan may be embossed into each slab or patty.

A further object of the invention is to provide a package of quarter pound slabs of solid table or cooking fat product individually wrapped or partially wrapped to be readily separable and removable from a special sealed wrapper which is not destroyed upon opening, but which retains its form and supporting characteristics for the protection and storing of the remaining contents.

A further and more specific object of the invention is to provide in a package of the character described a structure which affords a slot slightly exceeding the thickness of a quarter pound slab of fat product when the package is opened enabling the consumer to remove the slabs, one by one, by sliding them through the slot.

These and other objects and advantages of the invention will become apparent from the detailed description which follows taken in conjunction with the drawings.

In the drawings:

Fig. 1 is a perspective view of a quarter pound slab of margarine or other solid, edible fat product scored into uniform rectangles and resting upon a sheet of grease-proof paper.

Fig. 2 is a view similar to Fig. 1 with the ends of the paper folded over covering all but the side edges of the margarine.

Fig. 3 is a perspective view of the form of margarine

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slab illustrated in Fig. 1 with some of the rectangles broken off at the scoring.

Fig. 4 is a perspective view of a quarter pound slab of margarine or other solid, edible fat scored into triangles.

Fig. 5 is a view of a quarter pound slab of margarine or other edible, solid fat scored into subdivisions representing various standard measures.

Fig. 6 is a perspective view of a four-slab pound of margarine in process of being wrapped in accordance with the instant invention.

Fig. 7 is a similar perspective view of the margarine completely wrapped into a marketable package.

Fig. 8 is a fragmentary sectional view taken on line 8-8 in Fig. 7.

Fig. 9 is a perspective view showing the package with one flap unsevered and folded back to permit successive removal of the quarter-pound slabs from the package.

Fig. 10 is a fragmentary sectional view taken on line 10-10 in Fig. 9.

Fig. 11 is a perspective view of the package of Fig. 9, inverted and torn further, to open the package completely, so that all slabs may be removed substantially simultaneously.

Fig. 12 is a plan view principally diagrammatic, illustrating an apparatus and method for forming or wrapping the packages.

Fig. 13 is an elevational view of the apparatus shown in Fig. 12.

Fig. 14 is a view similar to Fig. 13, showing a modified form of apparatus for extruding and forming the slabs.

Fig. 15 is a fragmentary perspective view of a portion of the apparatus of Fig. 14.

Fig. 16 is a view similar to Fig. 4, but showing a quarter-pound slab of square area and completely presegmented in the apparatus of Fig. 14.

Fig. 17 is a perspective view showing four stacked quarter-pound slabs individually wrapped and ready to be packaged into an Eastern flat pound package.

Fig. 18 shows the margarine slabs of Fig. 17 wrapped in a tuck-end carton.

Fig. 19 is a perspective view showing the slabs of Fig. 17 contained in another type of carton.

For purposes of illustration, the invention description will refer henceforth primarily to margarine, because it constitutes an edible fat product suitable either for table or cooking use. In practicing the invention the margarine is produced as it has been in the past in quarter pound prints, except that at the point where the margarine is extruded from a conventional extrusion chamber 20 (Figs. 12 and 13), a special extrusion head 21 is employed which differs from the old conventional quarter pound opening in that an opening approximately $\frac{3}{8}$ inch high and three inches wide is employed. A knife 22 reciprocates vertically to cut the extruded ribbon of margarine into individual slabs between six and seven inches long.

The slabs are extruded onto a traveling web of paper 23 delivered from a supply roll 24 over guide rolls 25 and 26 along a belt 27 above a flat table 28. The paper normally is pulled along the table by power driven rollers (not shown) and at a speed of linear travel somewhat greater than the delivery speed of the extruded margarine, so that as each slab is cut off by the knife 22 a space appears between the slabs. Thus when the paper 23 is cut, as for example in the wrapper station 30, there remain extending sections of paper 31 and 32 (see Fig. 1) which may be folded over the ends of the slabs.

The margarine slab is marked or scored by a stamping or cutting process into small rectangles or triangles. The scoring may consist in forming relatively deep grooves 35 extending from the top of the slab, whereby the individual pieces may be readily broken off as used. If desired, the grooves 35 may extend the entire depth of the slab resulting in a plurality of individual pieces, as will be explained in detail hereinafter.

The scoring may be done in a number of different ways. For example, as shown in Figs. 12 and 13, the individual slabs of margarine are passed under a revolving wheel 40 located at scoring station 41. The wheel is embossed with scoring ridges and is maintained slightly heated to

assure freeing of the margarine from the surface of the roller after it has been pressed against the margarine.

Another example, not illustrated, would be to perform the scoring by passing a continuous slab of margarine under a revolving scoring wheel which wheel might also contain knives to determine the length of the slabs. In such case the combination roller and knives would serve both to sever and to score, thus taking the place of the knife 22 and the wheel 40. If the latter arrangement were employed, the scored slabs would fall on a narrow strip of paper used as a traveling web and by moving the paper faster than the peripheral speed of the cutting-and-scoring wheel the slabs would be separated.

The scoring wheel 40, or a separate wheel following the wheel 40, contains a knife to cut the paper 23 in between the slabs. This can be accomplished in the wrapper station 30 by conventional mechanism, not illustrated. As stated before, it is preferable that the paper be cut longer than each slab so that at the wrapper station the extending sections of paper 31 and 32 (Fig. 1) can be folded up and over the ends of the slab. This will protect the ends of the margarine from contacting directly the end folds of the completed package and will further protect the margarine ends from heat applied to seal the end folds of the completed package. Moreover, it will assure easy removal of the individual slabs when the completed package is opened by the consumer.

The extrusion machine may be a duplex or multiplex type, so that two or more slabs or strips may be extruded simultaneously side by side. Alternatively, a wide ribbon may be extruded which is separated by a cutting wire into the correct width for the individual slabs to go into the package. Various other ways can be used to perform the operation, as for example by pouring semiplastic margarine into a moving mold.

The essential thing to accomplish is the formation of margarine into relatively thin, rather elongated quarter pound slabs, scored to make the slab readily divisible into small measured units. Each slab rests on a sheet of paper which needs to be only as wide as the width of the slab but which is preferably longer than the slab so that the extending ends may be folded up and over the ends and top surface of the slab. It is preferable, although not essential, that the folded sections overlap, as shown in Fig. 2. Even if the extending ends of the paper are short so as to expose a portion of the margarine intermediate the folded over ends, the benefits of the invention will still be realized.

After the slabs have been cut, scored, and individually wrapped in the paper 23, they are stacked four high by any suitable mechanism known to the industry and indicated generally by the stacker station 42. After the accumulation and stacking they are conveyed into a suitable machine known to the industry, and indicated generally by the packaging station 43, where they are thrust into a partially folded wrapper or other package means which is completed and sealed as it progresses through the machine. The completed, sealed packages emerge as individual pounds of margarine 46 (see also Fig. 7).

The manner in which each pound of margarine 46 is wrapped in the packager 43 constitutes an important aspect of the instant invention and will now be described with reference to Figs. 6 through 11.

Referring to Figs. 6 and 8, four of the slabs 47 are stacked and fed to the packager 43 where a sheet of wrapping material 48, laminated or otherwise, is wrapped around the stacked rectangular slabs 47 which thus form a hexahedron and constitute the package contents. The opposing ends 51 and 52 of the sheet 48 form overlying flaps constituting one side of the package 46. As seen in Fig. 8, the inner flap 51 is narrower than the width of the side 53 by a distance slightly greater than the thickness of one of the slabs 47. It is preferred that the inner flap 51 fall short of the upper edge of the side 53 by a distance greater than the thickness of one slab, but less than the thickness of two slabs, thereby leaving a slot 56 through which the slabs 47 may be removed one by one, as will be explained more fully hereinafter.

The outer flap 52 is folded down over the inner flap 51 and sealed thereto, and the end flaps 54 are then folded inwardly against the ends of the package in the well known manner. The end flaps are preferably all sealed together to form an integrated box enclosing the stacked contents.

The importance of the slot 56 formed by the narrow inner flap 51 will now be explained. A consumer wishing to use the margarine package inverts it, to the position shown in Fig. 9 and tears the wrapper along two corner edges so as to sever the outer flap 52 from its corresponding end fold. The seal between the two flaps 51 and 52 is then broken with a knife or by inserting the fingers between the two flaps, and the outer flap is bent away from the package as shown in Figs. 9 and 10, thus exposing slot 56 and the side edge of the adjacent margarine slab 47. By tilting the package 46 at a slight angle, the bottom one of the slabs 47 may be caused to slide through the slot 56 as shown in Figs. 9 and 10, the inner, unsevered flap 51 serving to maintain the other three slabs 47 within the package.

The user may use all or a portion of the scored slab 47 and replace the unused portion by inverting the package 46 from the position shown in Fig. 9 and sliding the partially used slab 47 into the package through the slot 56 and on top of the other slabs.

In this manner, each of the four slabs 47 may be removed, successively, one by one from the package by sliding them through the slot 56.

The advantages of the particular manner of individual slab wrapping illustrated in Fig. 2 will now be manifest. The slabs 47 being composed of a fat product, naturally tend to stick together somewhat, and the end edges of the slabs have a tendency to stick to the end flaps or folds 54 of the outer wrapping. The individual wrapping shown in Fig. 2 precludes the sticking together of adjacent slabs by interposing the top and bottom wrapping layers, and the fact that the wrapping extends around the end edges of the slab precludes sticking of the slab to the end fold portion of the outer wrapper. The end edge protection afforded by the individual wrapping papers 23 also protects the fat product from the deleterious effects of the heat applied to seal the end flaps 54. The heat required to seal the end flaps 54 is considerably more intense than that required to seal the side flaps 51-52 because of the many layers composing the end wall of the outer wrapping. Therefore, end edge protection of the slabs is particularly to be desired. To preclude sticking of the exposed edges of the slabs to the outer wrapper, it may be desirable to wrap an inner lining of heavy grease-proof paper or other wrapping material around the stacked slabs, covering the exposed edges, before applying the outer wrapper 46.

If the user does not desire to employ the slot for individual successive removal of the slabs 47, the package may be placed in the position shown in Fig. 11 and the tearing continued so that a full, trunk-type lid 57 is formed, the outer flap 52 now constituting the lip of the lid 57. When used as shown in Fig. 11, all of the slabs 47 may be removed at once.

As will be readily evident by reference to Fig. 9, the advantage of the slot-type of operation is that an integrated box is retained, which can be subjected to considerable handling in the kitchen without coming apart. As is well known, the sheet material 48 forming the wrapping for the average margarine package is not particularly heavy, so that after extended use as a trunk-type package as shown in Fig. 11, the package tends to fall apart and become useless for further interim storage. Use of the package in the form shown in Fig. 9, obviates this disadvantage.

Reverting briefly to Figs. 1 through 5, inclusive, it will be seen that the instant invention provides a quarter-pound slab of margarine in such a form that, by means of the scoring shown, it may be easily consumed in small, accurately premeasured quantities, a characteristic heretofore completely absent from prior art margarine.

The scoring shown in Fig. 4 is particularly to be desired in certain States where margarine is required by law to be served in triangular, as opposed to quadrangular, pats.

The packaging form described hereinbefore is known in the art as a "California" style package. The principles of the instant invention are equally applicable to other shaped packages. By way of illustration, another shape of package, known as the "Eastern flat" style, will be described hereinafter.

Furthermore, the method shown in Figs. 12 and 13 for forming the margarine slabs may be replaced by other

methods, one of which will now be described, employing an Eastern flat shape, as example.

Referring to Fig. 14, margarine is extruded from a conduit 61 which opens vertically downward, in contrast to the horizontal opening of the extrusion conduit 21 of Figs. 12 and 13. As shown in Fig. 15, a wire network 62 is mounted transversely across the mouth of the extrusion conduit 61. The wires form a pattern of a series of contiguous triangles. Thus, as the column of margarine is extruded downwardly it is cut by the wire mesh 62 into a plurality of closely adjacent strands or shreds of triangular cross-section. After a short length (approximately one-quarter inch) of shredded margarine has been expelled beneath the mouth or lower edge 63 of the conduit 61, a blade 64 is moved horizontally across the mouth 63 and cuts off a slab 66 of margarine which drops onto the traveling web of paper 67. The area of the slab 66 is identical to the interior cross-section of the conduit 61, in this exemplary embodiment being square. By virtue of the action of the wire mesh 62, each slab 66 is pre-segmented into a plurality of completely severed triangles 68 which together constitute the slab 66. The network 62 may also be formed as a cast metal grill having thin, knife-like cutting webs.

As in the method described in connection with Figs. 12 and 13, the paper web 67 moves at a rate exceeding the extrusion capacity of the conduit 61, so that the slabs 66 are spaced along the web 67 as they move toward the scoring station 41. Since segmenting of the slab has already been effected by the mesh 62, the scoring station 41 may, if desired, be eliminated entirely. Alternatively, the scoring station 41 may be retained to emboss into each triangular segment any desired indicia, for example an "M" to denote margarine, or advertising, or trademark symbols may be embossed into the segments. Additionally, or in the alternative, the vitamin content of each slab may be denoted, or an advertising slogan may be embossed.

The remainder of the apparatus shown in Fig. 14 is substantially identical to that shown in Figs. 12 and 13 with the necessary adjustments to provide for the wrapping of square slabs and of square packages instead of the rectangular slabs and packages exemplified in Figs. 12 and 13.

In Fig. 2 the slabs are shown wrapped in a simple type of wrapping encompassing only four sides of the hexahedronal slab. If desired, the paper web 67 may be made wide enough so that end flaps remain at each side of the slab after the two edges of the paper have been folded over the top surface. These flaps are then folded in over the edges of the slab in conventional fashion. The resulting pile of four slabs 71 moving from the wrapper station 30 to the packager 43 then appears substantially as shown in Fig. 17.

In the packager 43 various types of wrapping may be applied to the Eastern flat shape illustrated in Fig. 17. If desired, the slotted wrapper of Fig. 9 may be employed. Alternatively, a conventional tuck-end carton may be applied, the result appearing substantially as shown in Fig. 18.

As a further alternative, a conventional sealed end package may be formed as shown in Fig. 19. In this package the extending flaps at each end are folded inwardly and sealed as shown at 76 in Fig. 19. To expedite opening of the package a pair of parallel perforation lines 77 may be formed in the outer wrapper encircling the package adjacent one end 76. These two perforation lines 77 define therebetween a tear strip 78, one end of which is formed into a lift tab 79.

To open, the user merely inserts his fingernail under the tab 79 and tears the strip 78 free of the package all the way around the end 76. The end 76 then becomes a cap for the package. If the tear is stopped just before complete encirclement of the package, the cap remains attached and may be replaced over the exposed edges of the slabs. If desired, the tear may be completed and the cap completely severed from the package.

While the instant invention has been shown and described herein in what is conceived to be the most practical and preferred embodiment, it is recognized that

departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent methods, apparatus, and articles.

What is claimed is:

1. A package comprising a plurality of stacked, rectangular slabs of edible fat forming a hexahedron and constituting the package contents, and a wrapper enclosing said slabs, comprising a sheet of wrapping material wrapped around said slabs, the opposing ends of said sheet forming overlying flaps constituting one side of the package adjacent and paralleling the edges of said slabs, the inner flap being narrower than the width of said side by a distance greater than the thickness of a slab and less than the thickness of two slabs, whereby when the outer flap is lifted a slot is exposed for sliding the slabs one by one out of the package through the slot.
2. A package comprising a plurality of stacked, rectangular slabs of edible fat constituting the package contents, and a wrapper enclosing said slabs and having a slot along an edge of one side of said wrapper paralleling the edges of said slabs and being of width exceeding the thickness of one slab and less than the thickness of two slabs whereby said slabs may be successively slid one by one from the package through said slot.
3. A package comprising a plurality of stacked slabs of edible fat constituting the package contents, and a wrapper enclosing said slabs and having a slot paralleling the edges of said slabs and being of width exceeding the thickness of one slab and less than the thickness of two slabs whereby said slabs may be successively slid one by one from the package through the slot.
4. A package comprising a plurality of stacked slabs of edible fat constituting the package contents, and a wrapper enclosing said slabs and having a slot along an edge of one side of said wrapper, adjacent an edge of one of said slabs, and being of width exceeding the thickness of a slab, whereby said slabs may be successively slid from the package through said slot.
5. A package comprising a plurality of stacked slabs of edible fat constituting the package contents, each of said slabs being individually wrapped by a sheet of paper extending underneath, around the ends, and over the top of the slab; and an outer wrapper enclosing said slabs and having a slot along an edge of one side adjacent a bare edge of one of said slabs, and being of width exceeding the thickness of a slab, whereby said slabs may be successively slid from the package through the slot.
6. Method of forming and packaging fat products, comprising extruding an edible fat substance into a plurality of closely adjacent strands, transversely slicing said plurality of strands thereby to form segmented flat slabs of fat product, wrapping each slab, stacking the slabs into piles of a predetermined number of slabs, wrapping each pile to form a package, and providing along an edge of one side of the package a slot of a width exceeding the thickness of one slab and less than the thickness of two slabs whereby said slabs may be successively slid one by one from the package through said slot.
7. The method of claim 6, including the step of embossing indicia on the face of each segment of each slab intermediate the slicing step and the wrapping step.

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