

April 22, 1941.

G. W. COCKS

2,239,482

METHOD OF PACKAGING IN BULK FROZEN COMESTIBLES OR THE LIKE

Filed Feb. 20, 1940

3 Sheets-Sheet 1

Fig. 1.

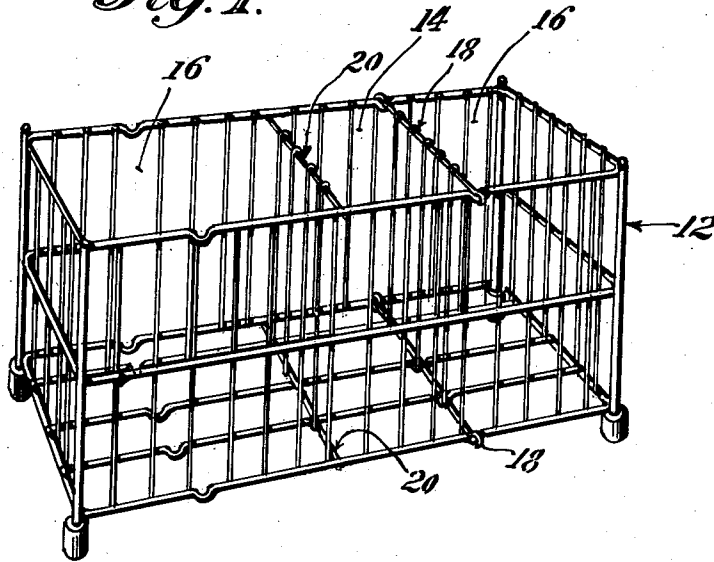


Fig. 2.

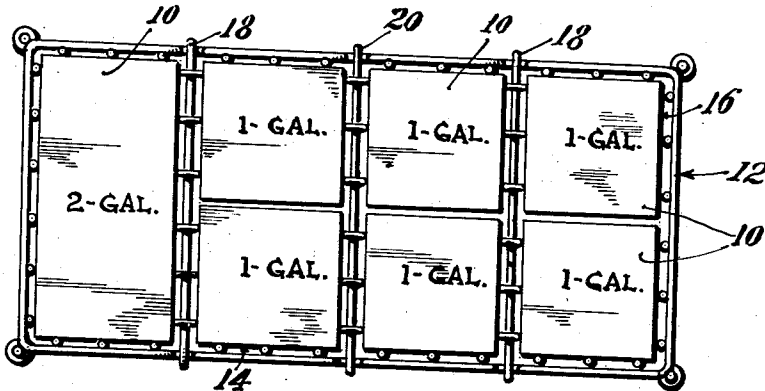
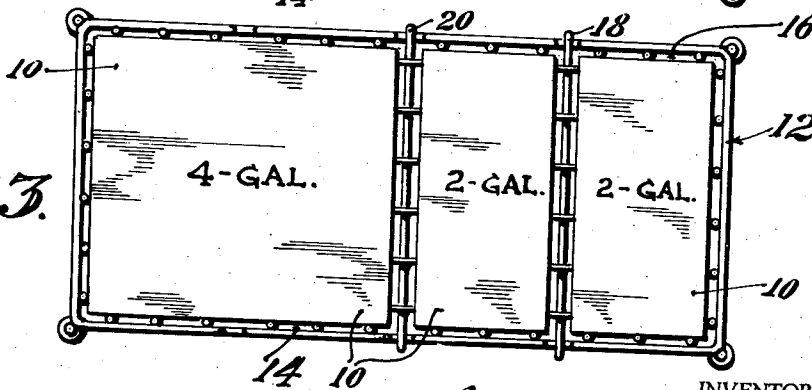


Fig. 3.



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Fig. 4.

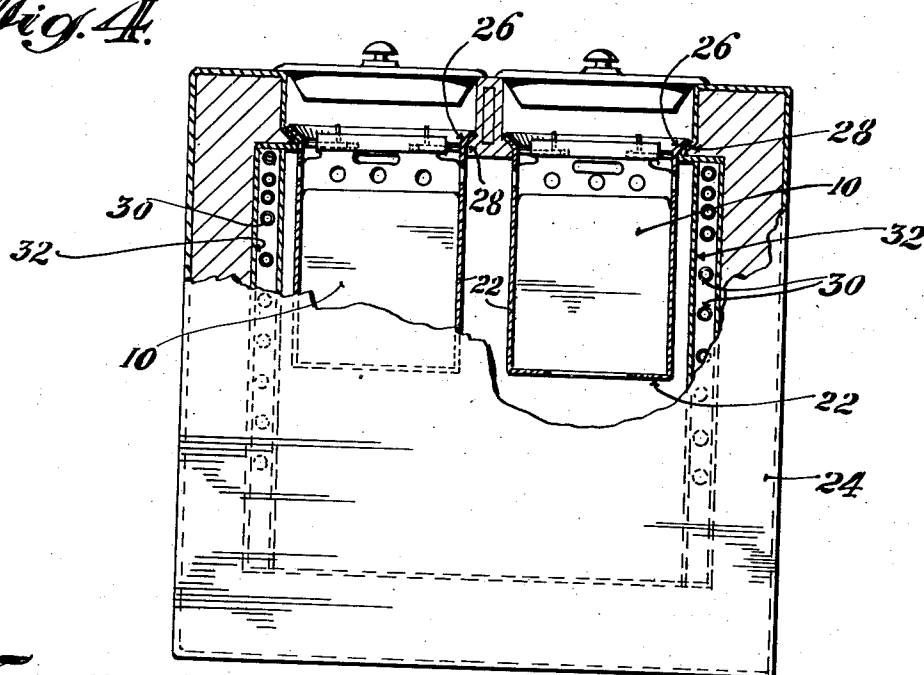


Fig. 5.

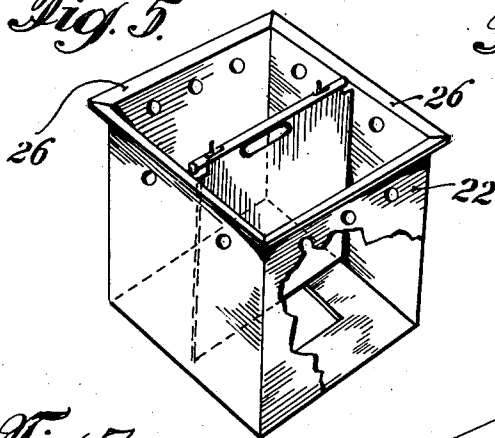


Fig. 6.

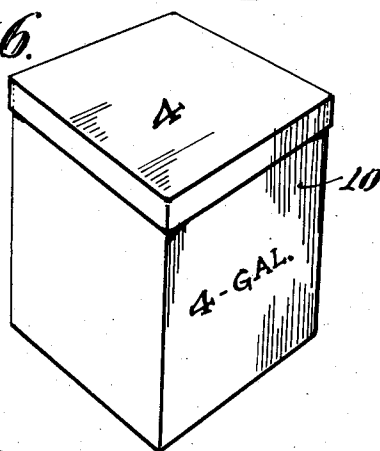


Fig. 7.

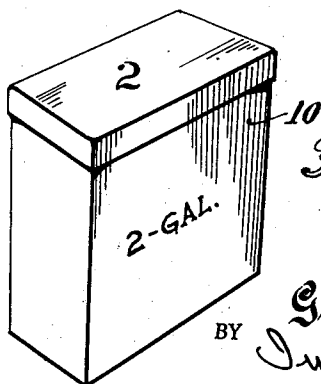
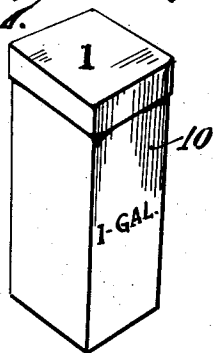


Fig. 8.

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3 Sheets-Sheet 3

Fig. 9.

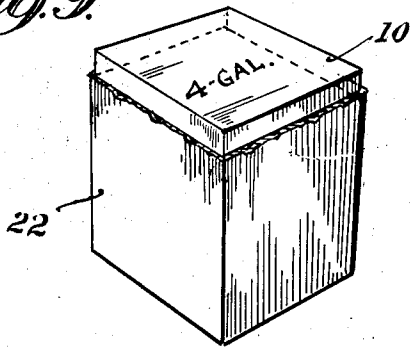


Fig. 12.

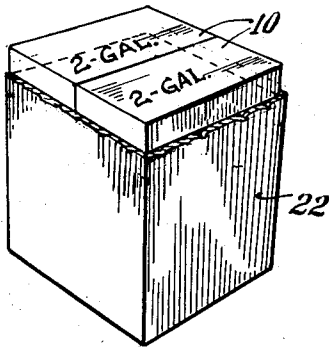
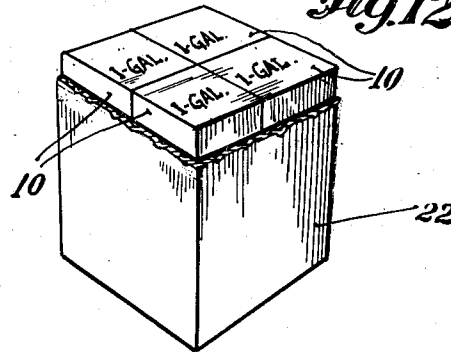


Fig. 10.

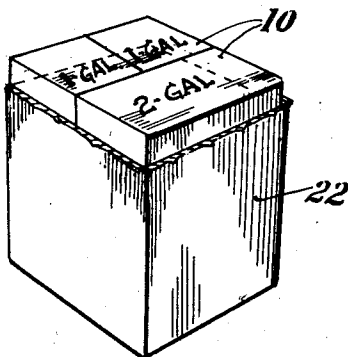


Fig. 11.

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UNITED STATES PATENT OFFICE

2,239,482

METHOD OF PACKAGING IN BULK FROZEN COMESTIBLES OR THE LIKE

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Application February 20, 1940, Serial No. 319,822

9 Claims. (Cl. 62—173)

This invention relates to an improved method of packaging in bulk frozen comestibles or the like, such as ice cream, in distortable cartons, constructed of paper or the like, having a predetermined contour and capacity for dispensing such comestibles therefrom. The invention relates more particularly to an improved method for the packaging and handling of ice cream and the like in bulk quantity as distinguished from packaging and handling it for individual servings.

I have heretofore proposed, as in Patent No. 2,109,102, issued to me February 22, 1938, to package bulk ice cream and the like in comparatively large cartons constructed of linerless paper or other distortable material. According to that process, the cartons are supported in a suitable receptacle while being filled with the semi-liquid comestible to thereby support the walls of the cartons and to prevent them from bulging or distorting whereby the carton capacity and contour will remain fixed.

After the cartons are filled with the ice cream or the like, they are subjected to freezing conditions to congeal and harden their contents while still being retained in the receptacles. There is thereby prevented any distortion or bulging of the carton walls during the freezing process so that their predetermined contour is unchanged. After the contents in the cartons have been frozen, they may be stored or delivered to retail stores for dispensing purposes.

The cartons so prepared are placed in suitable receptacles which are provided in the refrigerator cabinets and soda fountains now in general use in retail stores. Such supporting receptacles, which are more fully described in my application for patent for a Dispensing storage receptacle for bulk ice cream distortable carton, filed concurrently herewith, serve the purpose of supporting the collapsible and distortable side walls of the cartons during the dispensing therefrom of the frozen ice cream. Such supporting receptacles also prevent puncture or tearing of side walls of the cartons during the dispensing operation, and space the side walls of the cartons away from the side walls of the refrigerator cabinet or soda fountain so as to prevent carton side wall adhesion to the refrigerator walls. Such spacing of cartons also permits proper air circulation around all carton surfaces and maintains uniform temperatures throughout the mass of frozen comestible.

An important feature of the invention herein concerned is the provision of cartons having se-

lected or predetermined capacities and contour which are aliquants of a carton of larger selected or predetermined capacity and contour, any complete multiple assembly of which cartons may be supported in the same receptacle during filling and freezing operations while retaining their initial contour.

The packaging of ice cream and the like in unit receptacles as herein described provides an extremely flexible method whereby the ice cream manufacturer may package a larger number of different flavors in suitable and varying quantities for delivery to stores and restaurants and the like throughout the entire year. For example, during the summer months, if there should be a great demand for chocolate and vanilla or other flavors the ice cream manufacturers would package such ice cream flavors in larger size cartons, for example of a four-gallon capacity. However, if the demand for these flavors should lessen during other seasons, or if certain customers required only a small volume of certain other flavors at any time, then the ice cream manufacturer would package these flavors in cartons of one-half or one-quarter the size, for example of two-gallon or one-gallon capacity. Accordingly, the ice cream manufacturer can readily package and supply ice cream of any flavor in such varied quantities as will meet the seasonable or different needs of the customers. The stores and restaurants are, therefore, enabled to maintain sales of a larger variety of flavors throughout the entire year in such quantities as will be freshly delivered from the factory without prolonged storage in the refrigerated cabinet or soda fountain prior to consumption by the consumers.

In accordance with prior practice, ice cream manufacturers supply to retailers and restaurants ice cream in standard unit containers of 5 or 2½ gallon capacity. Furthermore, such containers have usually been round in contour, thereby occupying a large space in the refrigerator cabinet or soda fountain and thus making it possible to serve only a limited number of flavors from a given refrigerator cabinet or soda fountain. During the summer months, certain flavors are discontinued because of inadequate cabinet storage space and during other seasons certain flavors are discontinued because of prolonged storage thereof before consumption by consumers. When ice cream is held for long periods at dippable temperature, it softens and causes the ice-crystal formation to change with every fluctuation in temperature to which the ice cream is subjected while in the refrigerator cabi-

net. Such ice cream shows a marked inferior texture and flavor compared with ice cream which is delivered fresh from the factory.

According to the present invention, it is possible to have stored for sale fresh ice cream at all times because a rapid turnover thereof is made possible by storing for dispensing only such quantities of a given flavor of ice cream that are sufficient to accommodate the reasonable sales demand therefor. The flexibility of the packaging and dispensing of ice cream afforded by the present invention provides a commercially feasible and effective method of supplying "factory fresh" ice cream to consumers at all times.

This invention further provides a commercially effective method of storing additional flavors within a selected refrigerator cabinet or soda fountain during all seasons of the year.

Further, by choosing cartons of a suitable size for the gallonage and the number of flavors required, the present invention greatly reduces delivery costs. For example, a certain flavor of ice cream may almost be depleted when the scheduled customer delivery is made, but no space is provided under prior practice to replenish such flavor, thus necessitating a special delivery later in the day. Thus, the flexibility of the packaging and dispensing of ice cream offered by the present invention enables regular deliveries to supply the requirements of all customers and eliminates or greatly reduces expensive special deliveries.

Other and further uses of the invention will be apparent from the following specification and the drawings, in which—

Figure 1 is a perspective view of a supporting receptacle in which the cartons are supported during the filling and freezing operations.

Figure 2 is a plan view of the supporting receptacle illustrating cartons of unit contour and capacity which are aliquants of a larger unit contour and capacity that may be retained in said receptacle.

Figure 3 is a plan view of the supporting receptacle illustrating a combination of other cartons that may be retained therein of different contour and capacity.

Figure 4 is a cross sectional view of a refrigerator cabinet illustrating two insert receptacles suspended therein for snugly retaining and supporting cartons for dispensing servings therefrom.

Figure 5 is a perspective view of an insert receptacle.

Figure 6 is a perspective view of a carton of predetermined contour and having a capacity of four gallons.

Figure 7 is a perspective view of a carton having a predetermined unit contour and a capacity of one gallon.

Figure 8 is a perspective view of a carton having a predetermined contour and a capacity of two gallons.

Figure 9 is a perspective view of an insert receptacle snugly supporting a carton having a capacity of four gallons, the receptacle partially broken away.

Figure 10 is a perspective view of an insert receptacle snugly supporting two cartons each having a capacity of two gallons, the receptacle partially broken away.

Figure 11 is a perspective view of an insert receptacle containing three cartons snugly supported thereon, two cartons having a capacity of one gallon, and one carton having a capacity of

two gallons, the receptacle partially broken away, and

Figure 12 is a perspective view of an insert receptacle having four cartons of one gallon capacity each snugly supported therein, the receptacle partially broken away.

According to the present invention, bulk ice cream and the like is packaged in distortable cartons 10 constructed of paper or the like, preferably rectangular in shape, and so proportioned in size and dimensions as to constitute units or aliquoted parts thereof which may be conveniently placed during filling and freezing operations in a supporting receptacle 12 and thereafter in the insert receptacles provided in refrigerator cabinets for dispensing purposes. The supporting receptacle 12 comprises two compartments 14 and 16 which are each arranged to snugly receive one carton of the largest selected or predetermined capacity, preferably four-gallons capacity.

Such supporting receptacles are described in detail in my application for patent for Receiving and supporting receptacle for a bulk ice cream distortable carton, filed concurrently herewith.

As shown in Figures 6, 7 and 8, cartons 1, 2 and 4 may be constructed of 1-gallon, 2-gallon and 4-gallon capacity, and rectangular in shape. These cartons are so proportioned that four individual 1-gallon cartons 1, may be inserted within a compartment of the supporting receptacle 12, as shown in Figure 2, which is adapted to snugly receive the four cartons. The same compartments are also adapted to snugly receive two cartons 2, each of 2-gallon capacity, as shown in Figure 3, or a single carton 4, of 4-gallon capacity.

Suitable removable partitions 18 are provided between the cartons in order to support the side walls thereof during filling and freezing operations. The central partition 20 in the receptacle is preferably fixed. By moving the partitions 18 it is possible to adapt the same receptacle for receiving and snugly supporting any desired combination of different cartons having a unit aliquant volume and contour, or multiples thereof, as shown in Figures 2 and 3.

The packaging of bulk ice cream in accordance with the present method thus overcomes a long standing problem which has been encountered by retailers, hotels, and restaurants, namely the ability to supply a large varied assortment of flavors of ice cream and the like to customers during all times of the year with the same refrigerator capacity. As hereinabove pointed out, the cartons are so formed as to be receivable in the especially constructed insert receptacles 22, such as illustrated in Figure 5 for dispensing individual servings of ice cream from the cartons. Such insert receptacles are adapted to be suspended in conventional refrigerator cabinets 24, such as are ordinarily used in stores and restaurants.

These insert receptacles are provided with flange portions 26 which are adapted to engage supports 28, which may be provided in the conventional refrigerator. It will, of course, be understood that other means of supporting the receptacles in a refrigerator may be provided, as described in my above identified concurrently filed application, which sets forth in detail the constructional requirements for successful operation. The cabinets 24 otherwise are of usual construction having refrigerating coils 30 and insulation 32.

As shown in Figures 9 to 12, the insert receptacles 22 are so constructed as to snugly receive and support cartons having a predetermined unit contour and volume, or multiples thereof. The same insert receptacle can thus snugly support a four-gallon carton 4, as shown in Figure 9, or combinations of aliquants thereof such as two 2-gallon cartons 2, as shown in Figure 10; two 1-gallon cartons 1; and one 2-gallon carton 2, as shown in Figure 11; and four 1-gallon cartons as shown in Figure 12. In each case the cartons are snugly retained and supported in the inserted receptacle 22, since they are constructed so as to have a unit volume and contour, or multiples thereof.

In accordance with the present invention, the bulk ice cream and the like is packaged in cartons of rectangular contour, thereby utilizing practically the entire space within the refrigerator cabinet and making it possible to have a large number of different flavors of cartons for dispensing purposes. Each of the cartons placed within the refrigerator may contain a different flavor. The working capacity of the refrigerator is thus very considerably enlarged. As previously explained, it is possible to have in the same compartment of a refrigerator cabinet one, two, three, or four different flavors. For example, in the same compartment there may be placed four 1-gallon cartons each containing a different flavor. Or, there may be placed two 1-gallon cartons and one 2-gallon carton, each of the cartons containing a different flavor. Or, there may be placed two cartons of 2-gallon capacity, each carton containing different flavors.

Any suitable equipment may be used to package the bulk ice cream and the like in the cartons, as well as for snugly and rigidly supporting the cartons in the refrigerator cabinets for dispensing purposes. It is preferred to support the cartons during filling and freezing operations in receptacles 12 having a construction illustrated in Figure 1 which is described in great detail in my above identified concurrently filed application. The walls of the receptacle are preferably perforated so as to permit circulation of air around each of the cartons supported therein and at the same time the walls rigidly support the walls of the cartons in order to prevent any bulging or distortion of same during the filling or the freezing operations. The cartons containing the ice cream and the like are removed from the supporting receptacles 12 and placed in insert receptacles 22 which are suspended in the refrigerator cabinets for dispensing purposes, as previously explained. These insert receptacles are constructed, preferably of sheet metal, and have a predetermined contour, the walls being rigid in order to readily retain and support the cartons placed therein.

It will be readily apparent that a cabinet having horizontally movable receptacles such as are described in my Patent No. 2,089,341 issued August 10, 1937, may be adapted to snugly retain and support cartons. Such movable receptacles may be moved about so that access may be had to lower cabinet areas. Transverse movements bring the receptacle and contents into convenient dispensing position. These features are not possible with the suspended insert type receptacle which must be removed in order to gain access therebelow. Such insert receptacles are provided primarily in order that such equipment not in use may be fitted with carton-supporting

means and made available for the method of my herein described invention.

It will also be apparent that the dispensing cabinets and supporting receptacles described in my Patent No. 1,978,565, issued October 30, 1934, and my Patent No. 2,076,173 issued April 6, 1937, may be adapted to the present invention. In certain such receptacles, partitions, fixed or removable, would be employed to complete the carton supporting process.

It is to be understood that the process may be modified in any of its details and that the invention is not limited to the specific examples herein given.

I claim:

1. The method of packaging bulk ice cream for dispensing from cartons which comprises segregating semi-frozen ice cream into masses of multiple units, placing said masses in receptacles which are substantially filled by said masses of ice cream, and freezing the contents of said receptacles while retaining the predetermined contour of said receptacles, said receptacles being adapted to form a combined assembly having a predetermined contour.

2. The method of packaging bulk comestibles for dispensing from cartons having a predetermined contour and unit capacity which comprises providing a plurality of cartons having unit contour and capacity or multiples thereof, filling said cartons with a comestible, supporting the walls of said cartons during the filling operation in order to retain the predetermined contour of said cartons, subjecting the filled cartons to freezing conditions while supporting the walls of the cartons, and assembling said cartons in supporting receptacles of predetermined contour adapted to snugly receive and support a plurality of said cartons.

3. The method of packaging bulk ice cream and the like which comprises segregating a mass of semi-frozen ice cream into multiple units, placing said units in receptacles having a predetermined unit contour and capacity or multiples thereof, supporting the side walls of said receptacles and subjecting to freezing conditions in order to maintain the predetermined contour of said receptacles, and placing a plurality of said units in a receptacle of predetermined contour adapted to receive a plurality of said units and to snugly retain same during the dispensing operation of the contents within said cartons.

4. A method of packaging bulk ice cream and the like for dispensing from cartons constructed of paper and the like and having a predetermined unit contour and contents or multiples thereof which comprises segregating ice cream of different flavors into masses of multiple units, placing said masses in individual receptacles having a predetermined contour and capacity or multiples thereof, substantially filling said cartons with said masses of ice cream, hardening the ice cream in said cartons while retaining the walls thereof to prevent substantial distortion or bulging, and placing a plurality of said cartons into a combined assembly, said assembly having a predetermined contour and adapted to be received in a receptacle having a complementary contour whereby said cartons may be snugly retained and supported during the dispensing of the ice cream contained therein.

5. The method of packaging bulk ice cream for dispensing from cartons which comprises placing in a receptacle cartons which are predeterminedly proportioned in size and contour as to

form, and when placed in the receptacle, forming aliquot parts of a common multiple of size and contour, filling said cartons with the ice cream in semi-liquid condition, such receptacle being of size and contour to be substantially filled by said cartons and contents thereof to thereby support the walls of the cartons, and freezing the contents of said cartons while retaining the predetermined contour of the said cartons, said cartons and frozen contents being adapted to form a combined assembly having a predetermined contour.

6. The method of packaging bulk comestibles for dispensing from cartons having a predetermined unit contour and size which comprises providing a plurality of cartons having unit contour and size which are aliquot parts of a common multiple unit, filling said cartons with a semi-frozen comestible, supporting the walls of said cartons during the filling operation in order to retain the predetermined contour of said cartons, subjecting the filled cartons to freezing conditions while supporting the walls of the carton and assembling said cartons in supporting receptacles of predetermined contour and size which is a common multiple of said unit contour and size, said receptacles adapted to snugly receive and support a plurality of said cartons, the combined assembly of which form said unit of common multiple contour and size.

7. A method of packaging bulk ice cream and the like for dispensing from cartons constructed of paper and the like and having a predetermined unit contour and size, said cartons being aliquot parts of a common multiple unit which comprises placing in a receptacle a plurality of said cartons, the combined assembly of which forms said common multiple unit contour and size, said receptacle being of said common multiple unit contour and size, substantially filling each of said cartons with ice cream of a selected flavor, hardening the ice cream in said cartons while supporting the walls thereof to prevent substantial distortion or bulging and placing a combined assembly of a plurality of said cartons

which combined assembly forms said common multiple unit in a receptacle having a complementary size and contour adapted to receive, snugly retain and support the said combined assembly of cartons during the dispensing therefrom of the ice cream or the like.

8. The method of packaging bulk comestibles for dispensing from distortable containers which comprises placing in a receptacle cartons of a predetermined size and contour to form, when placed in the receptacle, aliquot parts of a unit common multiple of size and contour, filling said cartons with the semi-frozen comestible, said receptacle being of size and contour complementary to said common multiple to be substantially filled by said cartons to thereby support the walls of the cartons during the filling operation and freezing the contents of the cartons while retaining the predetermined contour of the said cartons, said cartons and frozen contents adapted to form a combined assembly having the predetermined contour of the common multiple unit.

9. The method of packaging bulk ice cream and the like which comprises placing in a receptacle cartons which are predeterminedly proportioned in size and contour to form when placed in the receptacle aliquot parts of a common multiple, filling said cartons with the ice cream or the like in semi-liquid form, said receptacles being of a size and contour to be substantially filled by said cartons and the contents thereof to thereby support the walls of the cartons during the filling operation and freezing the contents of the cartons while retaining the predetermined contour of the said cartons and placing a plurality of said cartons in a second receptacle of predetermined size and contour which is a common multiple of the size and contour of the said cartons, said second receptacle adapted to receive a plurality of said cartons and to snugly retain the same during the dispensing operation of the contents from said cartons.

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