

May 17, 1949.

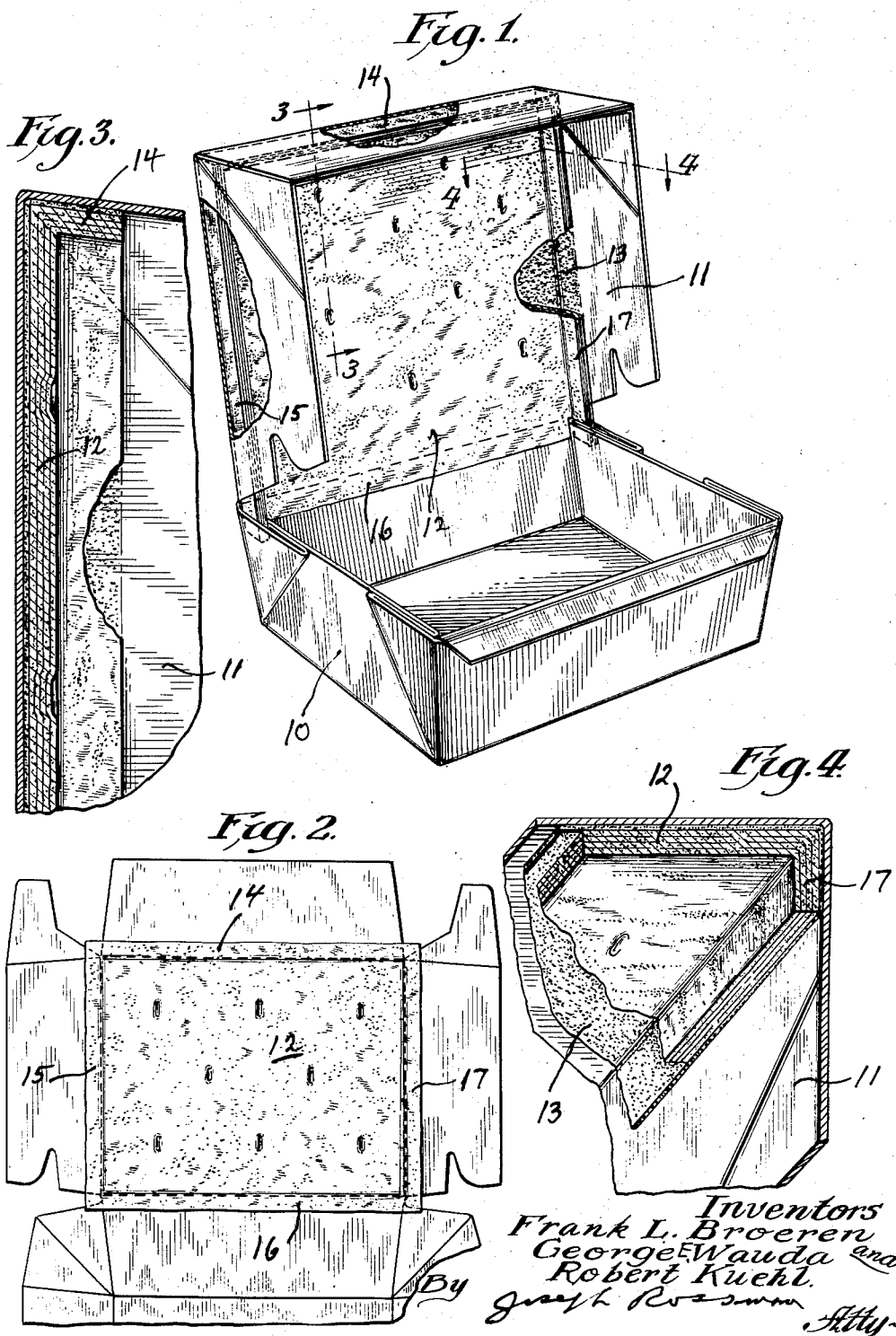
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FROZEN FOOD PACKAGE

Filed July 26, 1946

2 Sheets-Sheet 1



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Fig. 5.

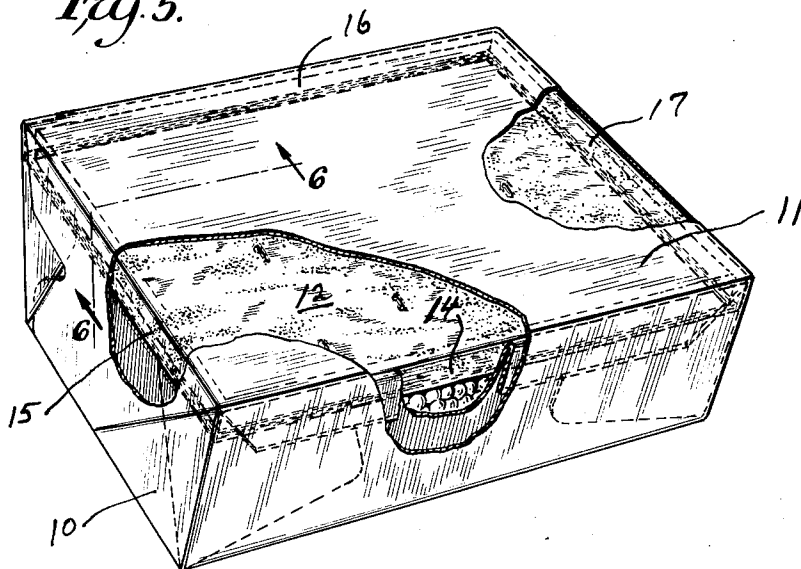
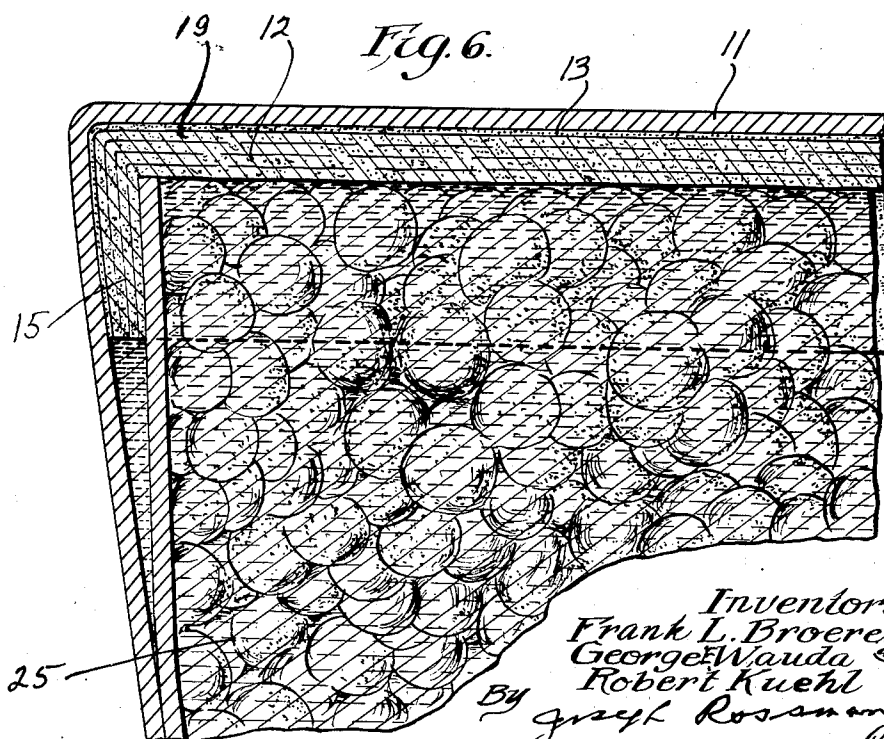


Fig. 6.



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FROZEN FOOD PACKAGE

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7 Claims. (Cl. 99-192)

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This invention relates to a package and carton for packaging foods and similar products which are subject to dehydration when stored at temperatures below 30° F. The package is provided with a pad of absorbent material which can be moistened or saturated with water and which will provide a seal for the package when frozen and act as a reservoir of moisture in the package from which the surrounding air can withdraw moisture.

Formerly in the packaging of foods and other products which are subject to dehydration and are stored at below freezing temperatures, it was necessary in order to deter dehydration to seal the contents of the package in a bag before placing it in the carton or to use a sealed overwrap. Products packaged in this manner were still subject to some dehydration because they did not contain moisture aside from the product itself which would supply moisture for the normal dehydration which occurs through the bag or overwrap.

In order to overcome this difficulty, we have provided a pad of absorbent material within the package which can be moistened and either positioned or adhered by suitable means to the inner portion of the lid of the carton or placed on the top of the packaged product before closing such lid.

Further objects and advantages of this invention will be apparent from the following specification and drawings wherein:

Figure 1 is a perspective view of a carton made in accordance with our invention,

Figure 2 is a fragmental plan view of the carton blank illustrating the absorbent pad attached to the cover,

Figure 3 is an enlarged sectional drawing taken on lines 3-3 of Figure 1,

Figure 4 is an enlarged sectional view taken on lines 4-4 of Figure 1,

Figure 5 is a perspective view of a completed package, partially broken away, made from the carton illustrated in Figure 1, and

Figure 6 is an enlarged sectional view taken on lines 6-6 of Figure 5.

Referring to the drawings, Figure 1 illustrates a carton of any suitable construction comprising a tray or receptacle portion 10 and a cover portion 11 hinged thereto. The cover portion may be integrally hinged to the tray portion or may be a separate cover which is adapted to be telescoped over the tray portion. One of the novel features of our invention resides in providing the inner face of the cover portion with a suitable water-

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absorbent pad or layer 12 extending over the entire inner face of the cover and preferably extending beyond the margins or score lines of the top cover panel so as to form marginal extensions 14, 15, 16 and 17 which are adapted to be folded at right angles to the main body portion of the absorbent pad 12 when the cover is closed as shown in Figure 5. We prefer to use a soft pad 12 which has the property of readily absorbing water. We have found that a multi-ply paper crepe wadding 12 laminated to a backing sheet of glassine 19 or wet-strength paper, cellophane, cellulose acetate, rubber hydrochloride and the like, is suitable. Such pad is preferably cut to a size which is larger in all dimensions than the overall dimensions of the lid and it is placed in the lid 11 or on the product 25 before closing so that there is an equal overlap along all score lines. For convenience the pad is preferably adhered to the lid.

Either before or after the product 25 is placed in the carton the pad 12 is moistened or saturated with water. When the carton is closed as shown in Figure 5, the lid 11, the folded over marginal portions 14, 15, 16 and 17 of the moist pad 12 and the outer top edges of the side walls of the receptacle or tray portion of the carton come in contact. The closed carton is then subjected to freezing temperatures and the freezing of the water in the pad 11 will form an ice seal between the lid 11, pad 12, and tray portion 10 of the carton.

If the product is stored at below freezing temperatures for a period of time, the surrounding air will cause the evaporation of this ice seal because there is more moisture in the seal than in the surrounding air. After the seal has evaporated the pad 12 will act as a reservoir of moisture from which the air can draw moisture, thus tending to retard the dehydration of the packaged product 25 inasmuch as the moisture is more readily available from the frozen pad 12 than from the product 25.

We have found that it is preferable to have the pad 12 composed of multi-ply crepe paper wadding laminated to a backing sheet of glassine and the like, and the glassine side of such pad adhered to the inner face of the lid of the carton by a suitable moistureproof adhesive 13 such as wax and the like. If desired the moistureproof backing sheet 19 may be directly heat-sealed to the cover 11. However, if the crepe wadding-glassine combination is used, so that the product will not come in contact with the crepe wadding, we have found that the crepe wadding may be ad-

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hered to the lid of the carton by a suitable adhesive and the glassine or similar sheet material presented toward the product, but if this method is used it is necessary that a series of holes be punched in the glassine to allow the moisture which is held by the crepe wadding to escape and to form the ice seal. We have found it convenient to adhere the absorbent pad to the inner face of the cover, but as previously explained the pad may be merely positioned in contact with the inner face of the cover without necessarily adhered thereto. Also if desired we may fill the receptacle portion with the food to be packaged and then place an absorbent pad of the character previously described saturated with water and of suitable dimensions on the open end of the receptacle so as to completely cover same, after which the cover is then placed on the receptacle.

Formerly in the packaging of foods or other products which will be stored at below freezing temperatures, a certain amount of air was left in the package when it was sealed and this air caused some dehydration of the product. A package embodying this invention does not have this disadvantage inasmuch as when the package is closed the soft pad on the lid or on the product forces more air out of the package. The moisture in the absorbent pad (2) upon freezing provides a relatively thin layer of ice which completely seals the upper open end of the receptacle so that the contents are fully protected against moisture loss as previously explained.

It is to be understood that various modifications and changes may be made in the construction of the package herein disclosed which are intended to be included within the scope of the appended claims.

We claim:

1. A frozen food package comprising a receptacle portion filled with frozen food, and a cover portion, said cover being provided with an exposed moisture-absorbent layer on the inner face thereof and in direct contact with said food, said absorbent layer being substantially saturated with water and frozen for sealing the said food within said receptacle portion.

2. A frozen food package comprising a receptacle portion filled with frozen food, and a cover portion, said cover being provided with an exposed moisture-absorbent creped paper layer on the inner face thereof and in direct contact with said food, said absorbent layer being substantially saturated with water and frozen for sealing the said food within said receptacle portion.

3. A frozen food package comprising a receptacle portion filled with frozen food, and a cover portion, an exposed moisture absorbent layer adhered to the inner face of said cover portion

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and in direct contact with said food, said absorbent layer being substantially saturated with water and frozen for sealing the said food within said receptacle portion.

4. A frozen food package comprising a receptacle portion filled with frozen food, and a cover portion, said cover being provided with an exposed moisture absorbent layer on the inner face thereof in direct contact with said food and extending beyond the marginal edges thereof and about the outer upper edges of said receptacle portion, said absorbent layer being substantially saturated with water and frozen for sealing the said food within said receptacle portion.

5. A frozen food package comprising a receptacle portion filled with frozen food, and a cover portion, said cover being provided with an exposed moisture-absorbent creped paper layer on the inner face thereof, a backing sheet of glassine adhered to said creped paper layer, said absorbent layer being substantially saturated with water and frozen in direct contact with said food for sealing the said food within said receptacle portion.

6. A frozen food package comprising a receptacle portion filled with frozen food, an exposed absorbent pad completely covering the open end of said receptacle portion, said pad being substantially saturated with water and frozen to form a layer of ice for sealing said receptacle portion.

7. A frozen food package comprising a receptacle portion filled with frozen food, an exposed absorbent pad completely covering the open end of said receptacle portion and overlapping the upper side walls thereof, said pad being substantially saturated with water and frozen to form a layer of ice for sealing said receptacle portion.

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