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REFRIGERATED CONTAINER

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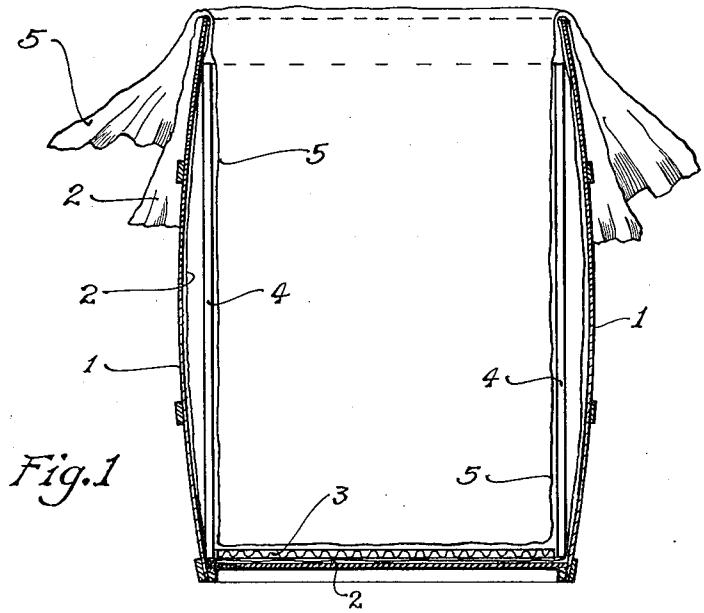

Fig. 1

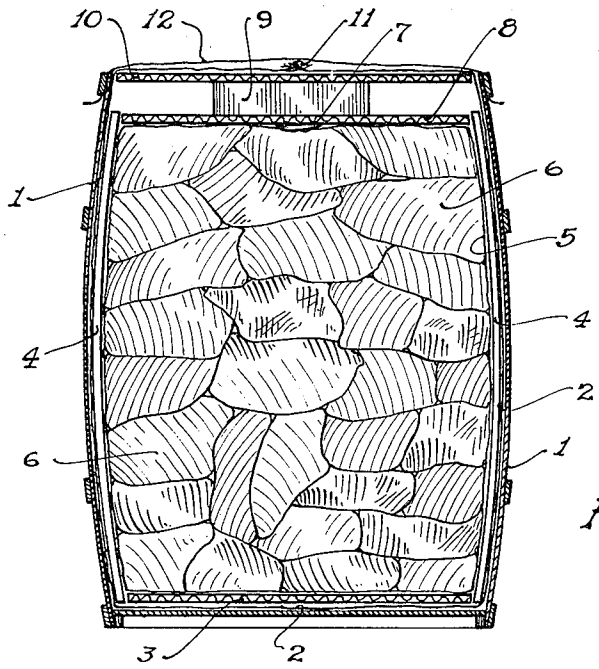

Fig. 2

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REFRIGERATED CONTAINER

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4 Claims. (Cl. 62—91.5)

This invention relates to a refrigerated food package.

One of the objects of the invention is to provide an inexpensive refrigerated package adapted for the transportation or limited storage of perishable food products.

Another object of the invention is to provide a wholesale meat package with self-contained refrigerating means, such that the package may be shipped in unrefrigerated vehicles.

Another object of the invention is to provide a refrigerated food package with self-contained refrigeration, such that the package when shipped in a refrigerator railway car or a refrigerator truck, will not substantially tax the refrigeration facilities of the vehicle, and will preserve the product irrespective of such facilities.

Another object of the invention is to provide a refrigerated food package which is an improvement on the refrigerated food package described and claimed in United States Patent No. 1,856,920, granted May 3, 1932, in response to the application of the present applicant and John E. Covey.

A preferred embodiment of the present invention is illustrated in the accompanying drawing in which similar reference characters in the two figures indicate similar parts.

Figure 1 is a cross-sectional view showing the package ready for packing.

Figure 2 is a cross-sectional view showing the completed package filled with product.

In preparing the package, a conventional wooden stave barrel 1 is lined with a waxed Arkell bag 2. Within bag 2, is placed a bottom disk or circlet of corrugated jumbo board 3, and the inner wall of the package is lined within bag 2, with corrugated jumbo pad 4, within which liner is placed waxed Arkell bag 5. The tops of bags 2 and 5 are folded down, around the upper peripheral edge of barrel 1 in the manner shown in Figure 1. The package is then filled with a perishable product 6, for example, cuts of beef, pork, lamb or the like. After the product has been packed to the desired height, bag 5 is folded over the top of the product and closed, as by tying a knot with soft string, wrapped around the gathered edge as at 7. A jumbo corrugated disk or circlet 8 is placed on top of the closed bag 5. A block of refrigerant 9 is placed on top of disk 8. The preferred refrigerant is solidified carbon dioxide. Although a block is preferred, the refrigerant may of course comprise a quantity of smaller pieces thrown loosely on circlet 8 or enclosed within a porous bag. After the refrigerant has been placed in position, a disk or circlet 10 is placed on top of the refrigerant.

Disk 10 is shown in the drawing as fabricated from corrugated jumbo board, however, other material may be used for this purpose. After disk 10 is in position, bag 2 is closed over the top thereof and tied at 11 similar to the manner in which the bag 5 is closed. In order to protect the top of bag 5, the barrel 1 may be headed up, or as shown in the drawing, capped with burlap top 12.

It will be seen, therefore, that the package of the present invention comprises an outer shell, two waxed Arkell bags, positively spaced, one within the other by means of corrugated jumbo pads, thus forming a gas chamber, the inner and outer walls of which are defined by the waxed Arkell bags. The refrigerant in this gas chamber, namely, solidified carbon dioxide, sublimates to a refrigerating gas which circulates within the chamber and refrigerates the product efficiently by reason of the fact that the product within the storage chamber, inside of the inner bag, is in contact with the inner surface of the inner bag, giving up its heat to the inner bag by conduction, this heat, of course, being radiated to the cold gas in the gas chamber from the walls of the bag and from the relatively great surface area of the jumbo liner within the gas chamber. Due to the fact that the outer bag is in contact on its outer surface only with the wood of the barrel and the burlap or other material of the cap, the refrigeration loss to the outside is not great, since any heat coming from the outside must pass by conduction through the walls of the barrel which act as effective insulation.

It will be understood that although the invention as hereinbefore described employs a wooden barrel as the outer shell of the package, other containers may be used if desired. It is important however, that the gas chamber provided between the two Arkell bags allow for free circulation of gas above, beside and below the product, within the product chamber, and it will be seen that the corrugated jumbo liners serve two functions. In the first place, the cells formed by the corrugation provide conduits for the free flow of cold gas given off by the solidified carbon dioxide, which being an anhydrous refrigerant, in no way affects the liners. In the second place, since the jumbo liners are in contact with the inner Arkell bag, they receive heat by conduction therethrough from the product within, the walls of the said conduits providing a relatively extensive area for radiation to the gas circulating within the conduits.

I claim:

1. A refrigerated food package comprising an outer shell of rigid material, a closed bag within said shell, a closed inner bag within said first mentioned bag, a corrugated circlet between said bags at the bottom thereof, a corrugated pad between said bags at the sides thereof, a corrugated pad above the top of the inner bag, solidified carbon dioxide above said upper corrugated pad, a corrugated pad above said solidified carbon dioxide within said first mentioned bag, a cover for said container, and product within said inner bag.

2. A refrigerated food package comprising a wooden barrel, a closed bag within said barrel, a closed inner bag within said first mentioned bag, a corrugated circlet between said bags at the bottom thereof, a corrugated pad between said bags at the sides thereof, a corrugated pad above the top of the inner bag, solidified carbon dioxide above said upper corrugated pad, a corrugated pad above said solidified carbon dioxide within said first mentioned bag, a cover for said container, and product within said inner bag.

3. A refrigerated food package comprising an outer shell of rigid material, a closed bag within said shell, a closed inner bag within said first mentioned bag, a corrugated circlet between said bags at the bottom thereof, a corrugated pad between said bags at the sides thereof, a corrugated pad above the top of the inner bag, solidified carbon dioxide above said upper corrugated pad, a corrugated pad above said solidified carbon dioxide within said first mentioned bag, said corrugated circlet and said corrugated pads provided with a plurality of walled conduits providing free circulation of gas throughout the chamber formed between said bags, a cover for said container, and product within said inner bag.

4. A refrigerated food package comprising a wooden barrel, a closed bag within said barrel, a closed inner bag within said first mentioned bag, a corrugated circlet between said bags at the bottom thereof, a corrugated pad between said bags at the sides thereof, a corrugated pad above the top of the inner bag, solidified carbon dioxide above said upper corrugated pad, a corrugated pad above said solidified carbon dioxide within said first mentioned bag, said corrugated circlet and said corrugated pads provided with a plurality of walled conduits providing free circulation of gas throughout the chamber formed between said bags, a cover for said container, and product within said inner bag.

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