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J. N. D'ESTE ET AL

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HEAT INSULATED PAPER BAG AND METHOD OF MAKING THE SAME

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Fig. 1

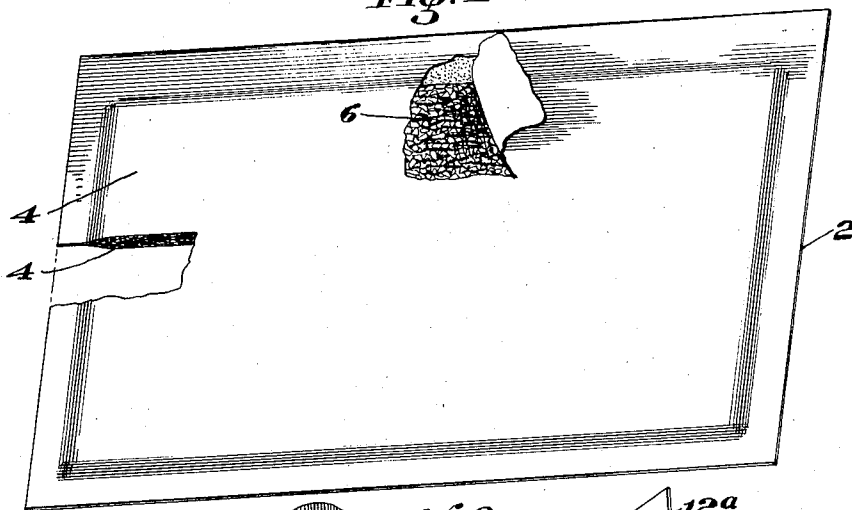


Fig. 2



Fig. 3

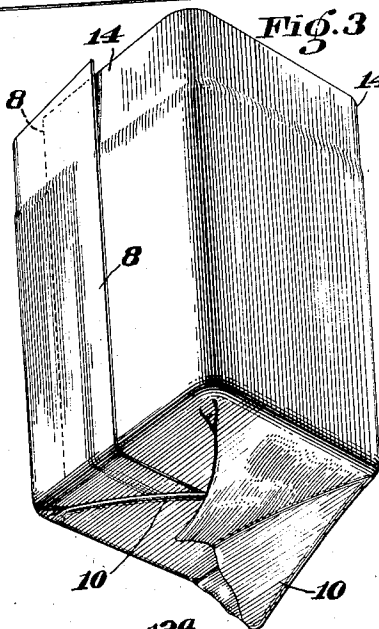


Fig. 4

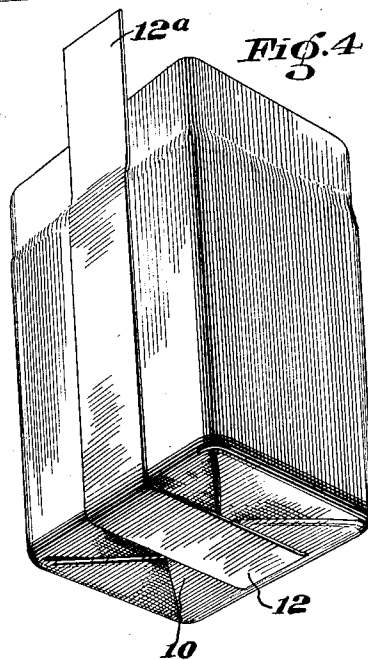
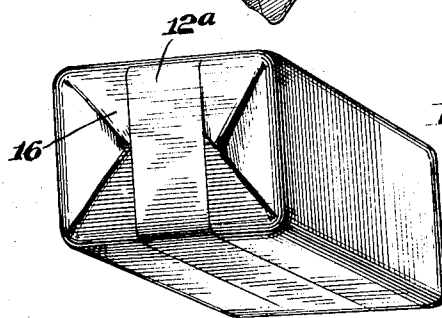


Fig. 5



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## UNITED STATES PATENT OFFICE

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## HEAT-INSULATED PAPER BAG AND METHOD OF MAKING THE SAME

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This invention relates to a new and improved means for protecting and maintaining in desired condition perishable food stuffs or the like, and has particularly to do with a novel heat-insulated flexible flat-bottomed paper bag for holding and transporting food stuffs, hot or cold, and the method of making the same.

The invention finds its chief use in connection with the sale and preservation of ice cream and other frozen products, providing a convenient and inexpensive means for maintaining frozen products in proper condition during transportation and until used, after which it can be thrown away. For this purpose the bag may be used with or without "dry ice" (solid carbon dioxide) according to the length of time it is desired to keep the interior of the bag at a relatively low temperature. It has been found in practice that the bag is a particularly effective means for maintaining food stuffs at desired temperature.

The invention possesses many advantages over present methods of ice cream distribution in that no return calls are required to collect the usual can and bucket, and no ice or salt have to be disposed of. The ice cream can be easily and quickly dispensed and stowed in the bag as required. There is a considerable saving in material, space, time and trouble in handling and packing, as compared with iced containers or the rigid and relatively large box-like containers in which dry ice has sometimes been employed as a refrigerant. Moreover, all these advantages are secured at a relatively low cost, for the herein described heat-insulating bag can be cheaply and quickly made from various low-grade materials such as jute waste, cotton waste, or waste paper, for example, newspapers, it being well known that such materials provide an infinite number of air cells and thereby form a very effective insulating material.

In the drawing, which shows the preferred form of bag and method of making the same,—

Fig. 1 is a perspective view of a pad from which the bag may be made and is cut and

broken away to illustrate the interior of the pad;

Figs. 2 and 3 illustrate the formation of the bag with the bottom in the process of being folded and with the adhesive strip of Fig. 2 ready to be applied to the side and bottom of the bag.

Fig. 4 is a perspective view showing the bag completed and with the adhesive strip of Fig. 2 applied to the same; and

Fig. 5 is a perspective view showing the loaded bag with the top folded and adhesively secured so as to form a package of box-like form with flat top and bottom.

Referring to the drawing, in which like numerals represent like parts, the bag or package is preferably formed from a flexible double-walled pad generally designated at 2, made up of juxtaposed sheets of paper 4, 4 with their contacting surfaces adjacent their edges adhesively secured together, and containing therebetween a relatively thick layer or bat of flexible insulating material 6. The insulating material preferably terminates short of the adhesively secured edges of the sheets 4 which insulating material may be a bat or filler of any suitable flexible, fibrous heat-insulating material such as jute waste, cotton waste or waste paper, but preferably consists of particles of partially disintegrated paper and completely disintegrated paper as described and claimed in the application of August Gerard and Maurice Weisman, Ser. No. 276,303, filed May 9, 1928. This material has, in practice, been found to provide a particularly efficient heat-insulating medium and the pad or cushion of the application of August and George A. Gerard, Ser. No. 332,888, filed Jan. 16, 1929, a suitable means for forming the herein described bag or package, though it will be evident that it may be formed in other ways.

Referring to Figs. 2 and 3, there is illustrated the preferred method of manufacture of the bag or package in which the flexible pad 2 is folded, say about a form of desired size temporarily placed therein so that the package may be made to closely fit the sides and bottom of the form. The form is, of course, selected with a view to the size and

form of the product to be confined in the package, for example, a wrapped brick of ice cream, so as to form a bag that will closely fit the flat surfaces of the brick and minimize air space between said surfaces and the enclosing walls of the package. In practice it is found convenient to first wrap the pad about the form so that the pad becomes in effect a rectangular tube with the edges 8 of the pad overlapping as shown in Fig. 3, and then form, fold in, and overlap tabs 10 to provide the flat rectangular bottom of the bag, following which the adhesive tape 12 of Fig. 2 is applied to the bag to seal the overlapped edges 8 and the tabs 10 as clearly shown in Fig. 4. It will be noted that the adhesive tape 12 of Fig. 4 has an extended portion 12a which may be used to seal together the top edges 14 if it is desired to use the device in ordinary bag form, or, the top edges 14 may be folded over (a confined brick of ice cream, for example) as tab 16 so as to form a flat topped package with the extended portion of the adhesive tape carried over and fastened thereon to seal the tabs to complete the flat sided form of a rectangular package.

The hereindescribed flat-bottomed bag, by reason of its flexibility, may be readily folded in the same general manner as an uninsulated paper bag. Thus the bags may be readily packed and stowed until ready for use.

What we claim is:—

1. A heat-insulated bag for perishable food stuffs, comprising layers of paper formed and united to provide a flexible flat-bottomed bag with an outer wall of paper and an inner wall of paper, said outer and inner walls containing and enclosing therebetween a layer of flexible fibrous heat-insulating material substantially surrounding said inner wall and flat bottom of said bag, and providing air cells between the walls.

2. A heat-insulated bag for perishable food stuffs comprising pieces of paper folded and attached together at their overlapping edges to form a flat-bottomed bag with an outer wall of paper and an inner wall of paper, said outer and inner walls containing and enclosing therebetween a layer of flexible fibrous heat-insulating material substantially surrounding said inner wall and flat bottom of said bag, and providing air cells between the walls.

3. A heat-insulated bag for perishable food stuffs comprising substantially rectangular pieces of paper in juxtaposition, the pieces of paper being folded so that one of said pieces forms an outer wall and another of said pieces forms an inner wall of the paper bag and together provide a double-walled flat bottom therefor, said outer and inner walls and bottom confining a layer of flexible fibrous heat-insulating material substantially surrounding said inner wall, and providing

air cells between the walls and an adhesive strip affixed near the mouth of the bag.

4. The method of making a heat-insulated bag for perishable food stuffs which consists in first forming a flexible double walled heat insulating pad comprising layers of paper confining flexible fibrous heat-insulating material therebetween, then folding said pad to form a flat-bottomed bag, and affixing together the flat bottom and the two overlapping edges of said pad to maintain the pad in bag form.

5. The method of making a heat-insulated bag for perishable food stuffs which consists in first forming a flexible double walled heat-insulating pad comprising adhesively attached layers of paper having flexible fibrous heat-insulating material therebetween, then folding said pad to form a flat-bottomed bag and affixing together the flat bottom and two overlapping edges of said pad to maintain the pad in bag form.

6. A heat-insulating bag for perishable food stuffs comprising layers of sheet material formed and united to provide a flexible flat-bottomed bag having inner and outer walls and a layer of flexible fibrous heat-insulating material between said inner and outer walls and substantially surrounding said inner wall and flat bottom of said bag, and means attaching said layers of material to each other solely about the periphery thereof, thereby to confine the insulating material between the layers of sheet material.

7. A heat-insulated bag for perishable food stuffs comprising layers of paper formed and united to provide a flexible flat-bottomed bag with an outer wall of paper and an inner wall of paper, said outer and inner walls containing and enclosing therebetween a layer of flexible fibrous heat-insulating material substantially surrounding said inner wall and flat bottom of said bag, and means confining said layer of insulating material within the bag.

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