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MEANS FOR PROTECTING FOOD COMMODITIES

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*Fig. 1.*

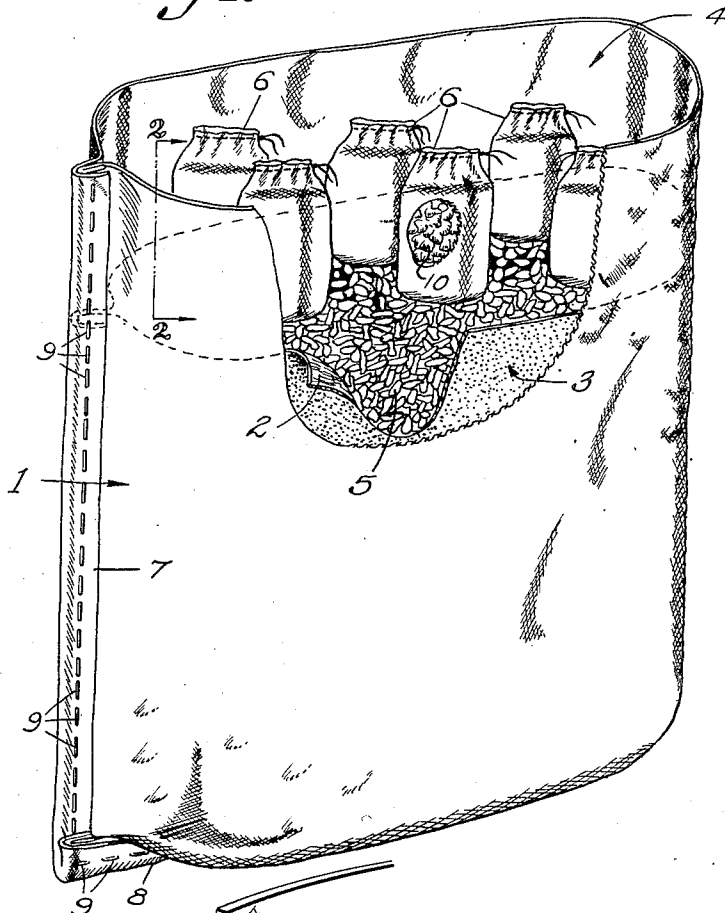
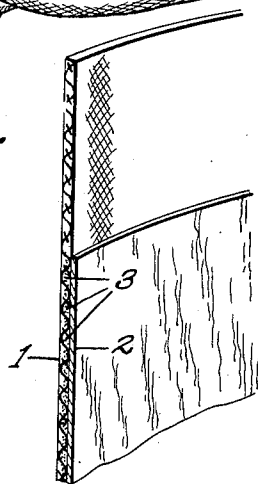


*Fig. 2.*



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## UNITED STATES PATENT OFFICE

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MEANS FOR PROTECTING FOOD  
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4 Claims. (Cl. 312-31)

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The present invention relates generally to bags adapted to contain edible commodities, and more particularly to the improvements in textile bags for edible commodities of an absorbent type, particularly types of commodities which are absorbent of moisture and odors of flavors from other commodities stored near-by or in adjacent containers.

There are many varieties of food commodities which tend to absorb odors and extraneous flavors volatilized from other commodities which may be stored or shipped contiguous thereto. For example, the odor and flavor of such commodities as onions or apples may be absorbed by commodities such as potatoes, peanuts, or other commodities which may be stored or shipped in close proximity, particularly where the exposure to such extraneous odors and flavors is prolonged, and obviously such extraneous odors and flavors constitute contaminating influences which alter or modify the true flavor characteristics and aroma of the commodities in which absorption has taken place. Additionally, such absorbent commodities are prone to become deteriorated by the absorption of excessive amounts of moisture from the atmospheric air, especially when the air is highly humidified.

In fact, many varieties of edible commodities are commonly shipped, transported, or stored in textile bags constructed from porous or open mesh material, and in order to protect the contents of such bags from deterioration from moisture or other extraneous or contaminating environments, it is customary to provide such coarse fabric bags with a paper lining adhesively secured to the fabric of the bags with a moisture and odor-resistant adhesive layer, which however only very imperfectly protects the contents of the bags against deterioration from such contaminating influences. While it is desirable to effect as complete protection as possible for such absorptive commodities, in many instances it is inadvisable to completely seal them against all access to air, as sealed-in moisture will tend to spoil, through mildewing, rotting, and the like, the commodities. Therefore, it becomes necessary for maximum protection of the desirable edible properties or characteristics of the commodities to permit access of air thereto, but to control the content or moisture and/or odorizing contaminants in such air as is permitted access to the commodities in the bags.

Therefore while generally, this invention relates to bags for edible commodities, it more especially is directed to a textile type of bag and

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method of controlling the admission of moisture and air to the commodity contents of said bag.

Edible commodities of varying types are usually transported or shipped in textile paper lined bags, and that certain of such commodities, in order to retain their perfection of edible qualities, must not only have air, but the amount of moisture and foreign odors entering the bag controlled, to prevent damage to and contamination of the bag contents.

Therefore, one of the principal objects of this invention is the provision of a bag constructed to provide an air space or breather passage through, and means in connection with said passage for not only adsorbing moisture entering the passage, but foreign odors as well, so as to maintain the commodities free from contamination and deterioration.

A further object of the invention is to provide a bag or container having an air space in one or both ends of the bag in which the adsorbent material is placed as independent units such as cakes of the materials, or if the material is in granular state enclosed in muslin bags or the like which will be permeable to the said moisture or odor-bearing air.

A still further object of the invention is to provide a bag of the above-indicated character which is made similar to a conventional waterproof textile paper-lined bag, except that the paper lining and adhesive layer therefor is stopped short of the end of the bag that forms the top thereof, or short of both ends of the bag, if desired, as will be apparent. The bag is to contain food commodities such as potatoes, peanuts, or other commodities affected deleteriously by the presence of excess moisture or by extraneous odors entering the resulting air space of the bag, while permitting the resulting treated air to reach the commodities in the bag, and thereby preventing deterioration or spoilage of such commodities by entrapped moisture.

A still further object of the invention is to provide any type of fabric bag, whether provided or not with a paper or other liner, with the conditioning agents of the invention for the purposes which have been indicated above.

Further objects of the invention will become apparent as the description proceeds, and the features of novelty will be pointed out in particularity in the appended claims.

Generally speaking, the invention contemplates the use, in conjunction with the bag and after the bag is packed, of adsorbent materials enclosed within the bag, such materials being ac-

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tivated charcoal, silica gel, or other adsorbent materials, which have the property of adsorbing or occluding moisture odors and the like contaminating constituents which may be present in the air, which materials are to be placed in the form of cakes, or in granulated or powdered form in muslin-type containers, canisters, or such other means as prove, in any given environment the most feasible, for the purpose of adsorbing such moistures and odors as may enter the air chamber or passage provided in the bag, for preventing transmitting to the commodity content of the bag of excessive moisture or of foreign odors from other commodities such as apples, onions, or similar volatile-yielding commodities which are at times stored in proximity to peanuts, potatoes, or similar commodities in public cold storage or other types of warehouses, as well as ship holds, or similar environments. The invention will be understood more readily by reference to the accompanying drawing wherein,

Fig. 1 represents a fragmentary perspective view of an improved bag embodying the features of the present invention with parts broken away.

Fig. 2 is a sectional view taken on the line 2-2 of Fig. 1.

Referring more particularly to the drawing, reference numeral 1 represents an open mesh fabric bag, such as a burlap bag, having a paper lining 2, adhering to the fabric bag 1 by a layer of waterproof asphalt or other adhesive 3. The lining 2 is shown as terminating short of one end of the bag, such as the top end to provide an air space 4. Said bag is adapted to be closed by a line of stitching or a draw-string or other closing means, not shown. The bag is packed with food commodities 5 on which rest a plurality of adsorbent units 6, composed of moisture- and odor-adsorbent material such as activated charcoal, silica gel, adsorbent alumina, or the like 10, which may be in the form of compressed units such as cakes or if comminuted, held in muslin bags as shown, or other containers, such as perforated canisters. If desired, the air space 4 may be duplicated at both ends of the bag and the units of adsorbent materials placed in the said air spaces. If commodities which tend to absorb moisture and extraneous odors and are deteriorated thereby are packed in an unlined bag, the adsorbent units may be disposed in sufficient quantities among the interstices of the commodities, which interstices confine air spaces or passages through the commodity content in the bag. The bag has reinforced edges 7 and 8 stitched along seams 9.

It will be apparent from the foregoing that the invention includes the disposition of moisture- and odor-adsorbent units in contiguous proximity to food commodities packed in bags or other containers that are pervious to air containing such components as contaminants for such commodities.

Although in practice it has been found that the form of the invention illustrated in the accompanying drawing and referred to in the above description as the preferred embodiment is the most efficient and practical, yet realizing that conditions concurrent with the adoption of the invention will necessarily vary, it is desired to emphasize that various minor changes in details of construction, proportion and arrangement of parts, may be resorted to within the scope of the appended claims without departing from or sacrificing any of the principles of this invention.

Having thus described the invention, what I desire protected by Letters Patent is as set forth in the following claims:

1. An open mesh fabric bag for food commodities tending to deterioration in the presence of moisture and extraneous odors, the bag having a substantially non-porous, air- and moisture-impervious continuous lining secured to all interior surfaces of the open-mesh bag and sealing the meshes of the bag against permeation of air and moisture into the interior of the bag through the lining, the said lining however terminating short of one end of the bag to define a breather air space in the end of the bag through which space ambient atmospheric air may circulate freely, and a plurality of desiccating and deodorizing adsorbent units loosely disposed in the air space for adsorbing moisture and odors from air entering the space before it reaches the said commodities.

2. An open mesh fabric bag for food commodities tending to deteriorate in the presence of moisture and extraneous odors, the bag having a continuous substantially non-porous, air- and moisture-impervious paper lining permanently adhesively secured to all interior surfaces of the bag and sealing the meshes of the bag against permeation of air and moisture through the lining and fabric of the lined portions of the bag, the said lining however terminating short of one end of the bag to define an unlined breather air space in an end of the bag through which space ambient atmospheric air is free to circulate substantially unobstructedly through the unlined meshes of the bag at the air space in the bag, the commodities being located in the lined portions of the bag, and desiccating and deodorizing adsorbent material disposed in the air space for adsorbing moisture and odors from air entering the space before it reaches the said commodities, the adsorbent material being contained in air-pervious open-mesh fabric bags loosely disposed substantially uniformly throughout said air space.

3. A container for food commodities, which comprises an open mesh fabric bag, a continuous moisture- and air-impervious heavy paper liner permanently adhesively secured to all interior surfaces of the bag and sealing the meshes of the bag and the pores of the fabric of the bag against permeation of air and moisture through the lining and fabric of the lined portions of the fabric bag, the said lining however terminating short of an end of the bag to provide an unlined breather air space in the end of the bag, through which unlined air space ambient atmospheric air is free to circulate substantially unobstructedly through the unlined meshes of the bag at the air space in the bag, the air space being in the upper end of the bag when the bag is filled with commodities to a height coextensive with the liner, and a plurality of moisture- and odor-adsorbent units loosely positioned on the commodities and in the said air space for protecting the commodities against moisture and extraneous odors.

4. A container for food commodities, which comprises an open mesh burlap bag, a moisture- and air-impervious heavy paper liner permanently adhesively secured to all interior surfaces of the bag and sealing the meshes of the bag and the pores of the burlap of the bag against permeation of air and moisture through the lining and fabric of the lined portions of the bag, the said lining however terminating short of an end

of the bag to provide an unlined breather air space in the end of the bag, through which unlined air space ambient atmospheric air is free to circulate unimpededly through the unlined meshes of the bag at the air space in the bag, the said air space being in the upper end of the bag when the bag is filled with commodities to a height coextensive with the liner, and a plurality of moisture- and odor-adsorbent units loosely positioned on the commodities and in the said air space for protecting the commodities against moisture and extraneous odors, the said units comprising relatively small open mesh fabric bags loosely containing moisture- and odor-adsorptive material, and closure means for the said small bags for retaining the material therein while permitting free access of air from the said air space to the said material.

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