July 19, 1938. R. T. WALKER 2,123,869

INSULATING PACKAGE

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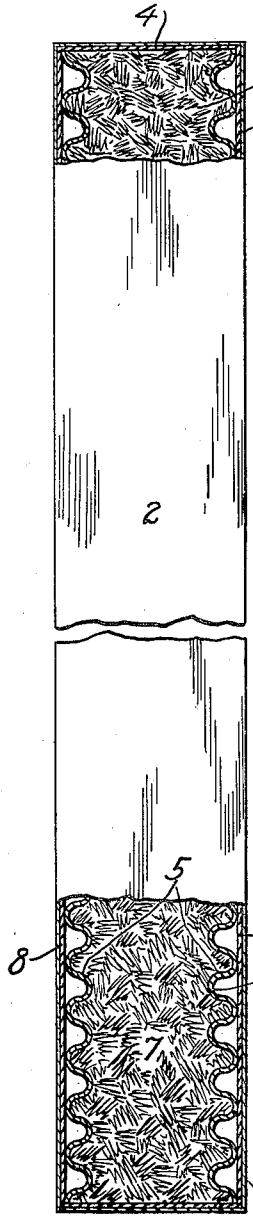


Fig. 2

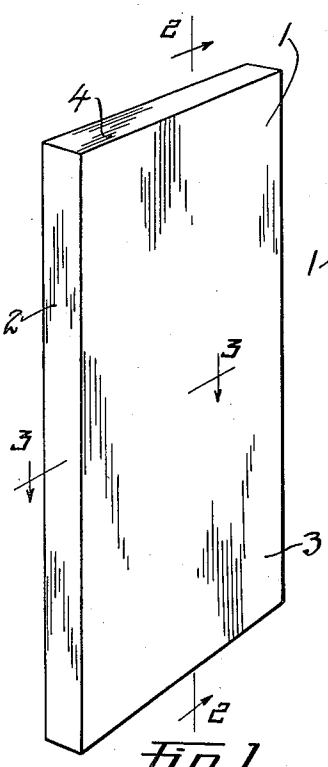
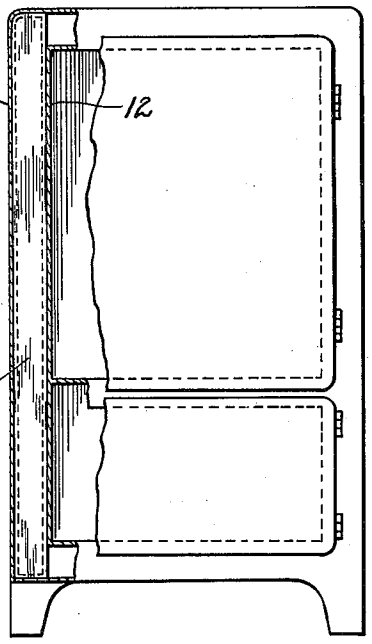


Fig. 1

Fig. 5



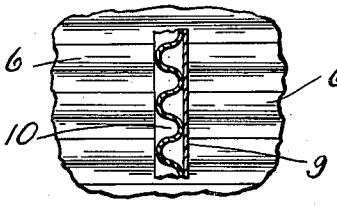


Fig. 4

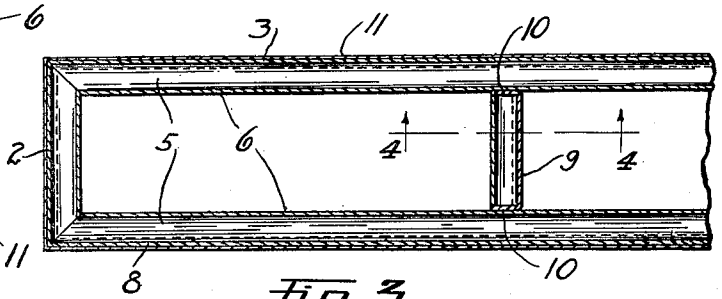


Fig. 3

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INSULATING PACKAGE

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3 Claims. (Cl. 154—44)

This invention relates to an insulating package and more particularly to an insulating package which is adapted for use in insulating refrigerators against heat exchange, although it is specifically understood that the use of the package is not limited to refrigerators.

In the manufacture of refrigerators it is common practice to insert between the inner and outer walls of the refrigerator a material having a high heat insulating value. Various types of insulating materials have been used heretofore but a special problem has arisen in those cases in which an insulator is used which will settle or pack when subjected to vibrations and jarring such as occurs during the assembly and transportation of the refrigerator or insulating package. Among such insulating materials which will settle when vibrated or jarred during handling and shipment may be mentioned the exfoliated vermiculites such as zonolite, rock and mineral wool, and other insulating materials in which the porosity is a large factor in its insulating value.

It is an object of this invention to obviate the settling and packing of those insulating materials such as above mentioned and to produce a packaging arrangement for such materials which will maintain them in substantially their original condition and thereby insure the original insulating value of the material.

When the above mentioned kinds of insulating materials are put up in package form so that the packages, for example, may be inserted between the inner and outer walls of a refrigerating cabinet for insulating purposes, it is desirable that the walls of the package be as thin and light as possible. However, when the walls are made of some such light material as paper, cardboard, or other fibrous board, the settling of the insulating material will cause the package to bulge and get out of shape thus making it unfit for use between the walls of the refrigerator.

It is an object of this invention to produce a package from a light weight paper or cardboard material which will maintain its original predetermined dimensions during shipment and handling.

In the drawing:

Fig. 1 is a perspective view of an insulating package which incorporates the instant invention.

Figs. 2 and 3 are sections along the lines 2—2 and 3—3 of Fig. 1.

Fig. 4 is a section along the line 4—4 of Fig. 3.

Fig. 5 shows a refrigerator partly broken away between the inner and outer walls of which is positioned an insulating package incorporating the instant invention.

Referring more particularly to the drawing there is shown a package generally designated 1 which incorporates the instant invention. This package comprises side walls 2, front walls 3, and end walls 4. When a package such as this is filled with zonolite or some other insulating material which will pack upon being jarred or vibrated each portion of the material must support the portion above it. The packing of the insulating material decreases its porosity and its insulating value is correspondingly impaired. It is proposed to eliminate this packing of the insulating material by dividing the body of insulating material into contiguous zones and each of which is relieved from supporting alone the entire weight of the zone or zones of insulating material above it. This is the underlying principle of the instant invention and this principle may be worked out in numerous ways.

The side, front and end walls of the package are made from a light weight cardboard, paper board, or other fiber board.

For purposes of description, although it is specifically understood that the invention is not limited to the exact form shown, the inner opposed faces of the walls of the container are provided with a paper facing 5 of light weight paper material having corrugations 6. These corrugations, as shown in Figs. 2 and 4, extend horizontally so that they are positioned transversely of a vertical plane so that the corrugations serve as shelves or supports for the insulating material into contiguous zones thus relieving any zone of the insulating material from the weight of the material above it.

The insulating material 7 herein shown is zonolite which is an exfoliated vermiculite. It will be seen that the zonolite upon the filling of the package flows or works into the corrugations. The upper face of each corrugation acts as a shelf and the zonolite itself between the corrugations will mesh and in some degree arch between the corrugations on the front wall 3 and rear wall 8 of the package. Thus the corrugations 6 actually support in some measure more than merely the portion of the zonolite which is vertically above the upper face of each corrugation.

It has been found that this shelving action on the part of the corrugation supports a sufficient portion of the weight of the zonolite to completely eliminate packing of the zonolite and bulging of the bottom part of the walls of the pack-

age during transportation and the handling which accompanies assembling the package within the refrigerator. The corrugations also in themselves help somewhat to strengthen the walls of the package.

The package may also be provided with an inside stiffener in the form of a strip of corrugated paper 9 which extends vertically along the middle and from one end to the other of the package. The stiffener is provided within flanges 10 which may be glued, cemented or otherwise secured to the inside face of the front and rear walls of the container. The stiffener strip 9 is also provided with a facing of light weight paper provided with horizontal corrugations 6. After the package has been filled and the ends sealed, the entire package may be covered with a suitable waterproof coating of paraffin or similar waterproof material or preferably covered with a waterproof paper 11.

In Fig. 5 there is shown a refrigerator cabinet having an inside wall 12 and an outside wall 13. During the assembly of the refrigerator cabinet the space between the inside walls 12 and outside walls 13 may be filled with insulating packages 1 such as above described. These packages preferably are pre-fabricated according to the size of the space between the inner and outer walls of the refrigerator into which they are inserted.

Although the invention is herein shown incorporated in an insulating package it is understood that the invention can be applied to any container for an insulating material which will settle upon vibration or jarring such as occurs during handling or transportation of the container.

I claim:

1. An insulating package having predetermined dimensions comprising in combination a closed container having fiber-board walls, a filler for said container comprising a continuous body of loosely packed particles of insulating material encompassing a multiplicity of pores, the strength of the fiber-board walls of said container being insufficient alone without bulging to support the said material when subjected to vibration incident to handling and transporting of the package, and a corrugated facing for each of the inside walls of the container having contiguous corrugations extending horizontally whereby the said corrugations support contiguous zones of insulating material one above another and prevent settling of the insulating material and bulging of the package.

2. An insulating package having predetermined dimensions comprising in combination a fibrous cardboard container, a filler for said container comprising a continuous body of loosely packed particles of exfoliated vermiculite, the strength of the walls of the said container being insufficient alone without bulging to support the said exfoliated vermiculite when subjected to vibration incident to handling and transporting of the package, and a corrugated lining for each of the opposed inside faces of the container having the corrugations extending horizontally and throughout a substantial portion of the height of the container, the corrugations of the one lining being positioned directly opposite the corrugations of the other lining, the said corrugations supporting contiguous zones of the exfoliated vermiculite one above another whereby settling of the vermiculite and bulging of the package is prevented.

3. An insulating package comprising in combination a fibrous cardboard container, a filler for said container comprising a continuous body of loosely packed particles of insulating material encompassing a multiplicity of pores, corrugated linings secured to opposed walls of the container in spaced relation to form a continuous straight passageway for the insulating material from the top to the bottom of the container, the corrugations of the one lining being positioned directly opposite the corrugations of the other lining, the said corrugations extending horizontally and throughout a substantial portion of the height of the container to support contiguous zones of the insulating material one above the other whereby each zone is relieved of supporting a substantial portion of the weight of the zone or zones above it and settling of the insulating material and bulging of the package is prevented.

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