June 13, 1961 W. L. MORRISON 2,988,241

INSULATED SHIPPER CONTAINER

Filed Oct. 3, 1958 2 Sheets-Sheet 1

Fig. 1.

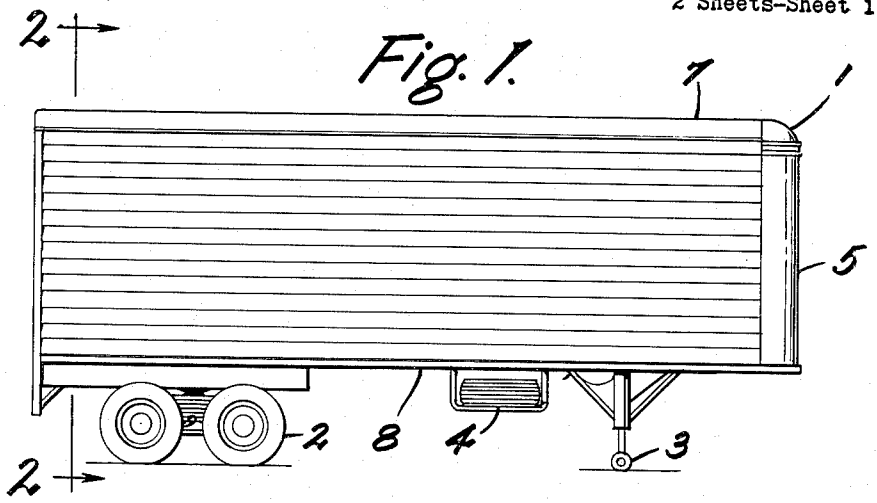
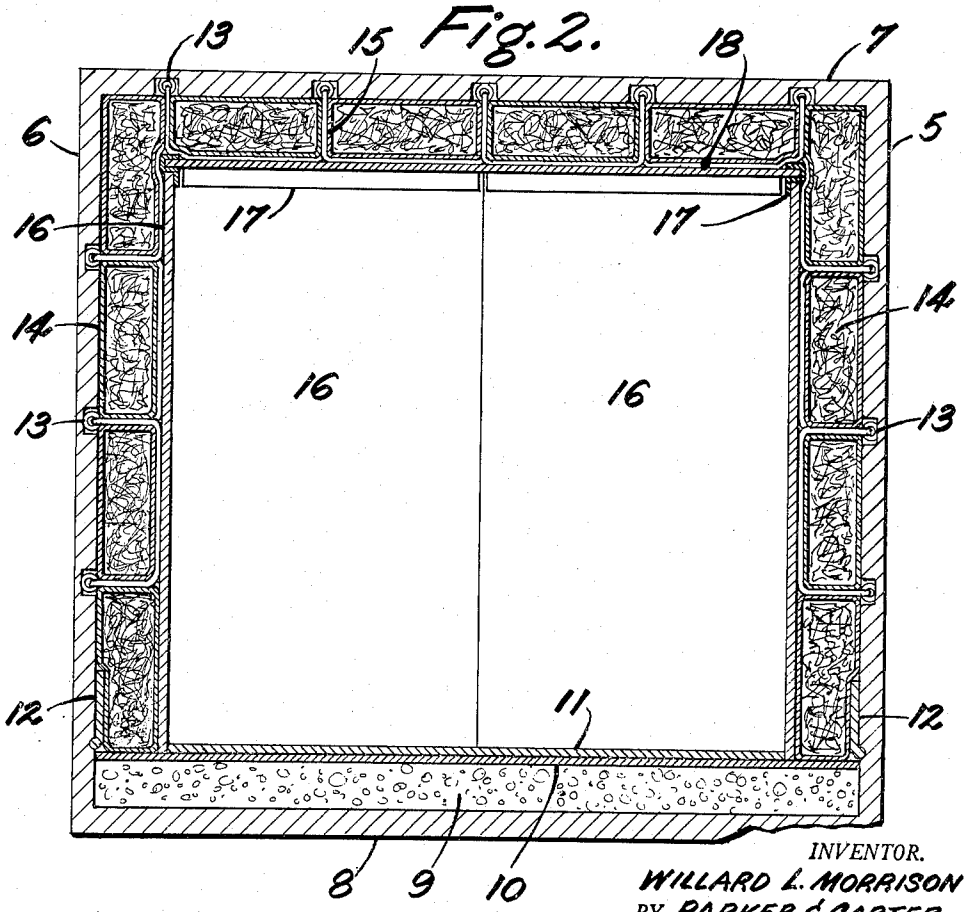



Fig. 2.




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Filed Oct. 3, 1958 2 Sheets-Sheet 2

Fig. 3.

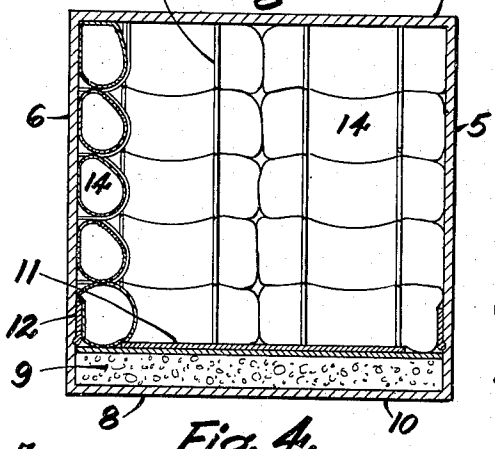



Fig. 6.

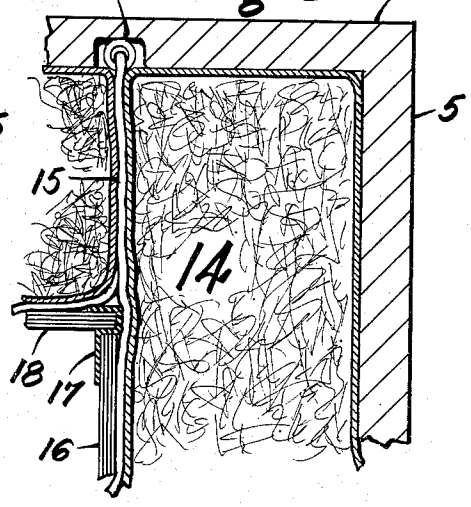
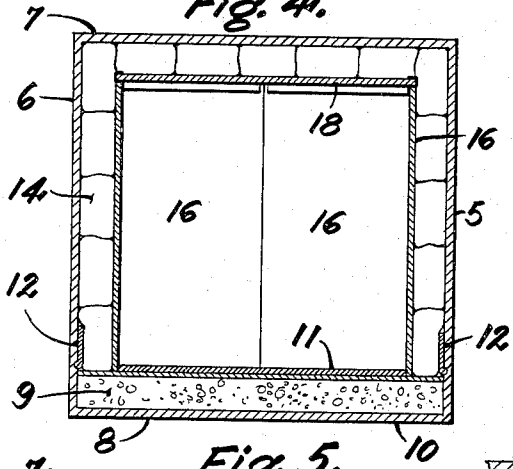



Fig. 4.



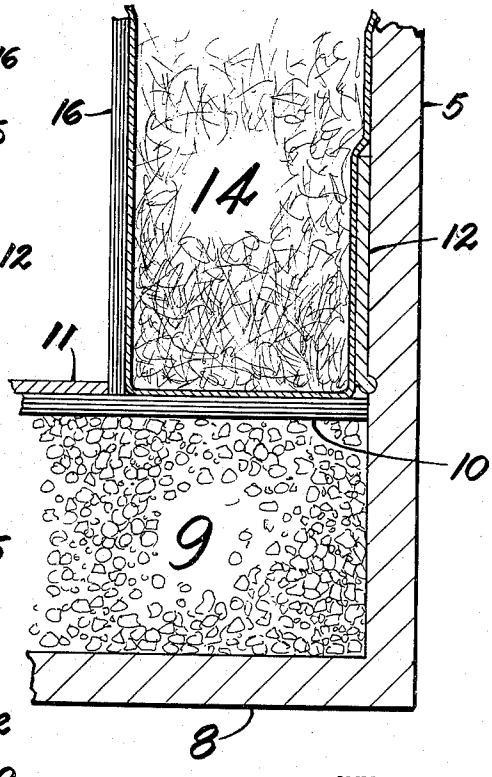
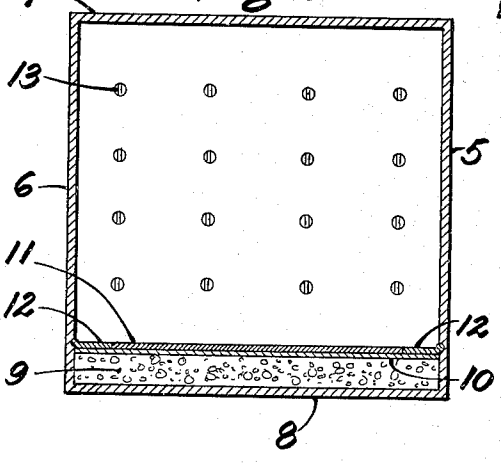




Fig. 5.




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2,988,241

# INSULATED SHIPPER CONTAINER

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7 Claims. (Cl. 220—9)

My invention relates to improvements in insulated shipper container and method of assembling it and has for one object to provide in a shipper container which may, for example, be a vehicle body, removable insulation which may be shipped with the material to be insulated to destination and then may be delivered for use at that point.

Another object of the invention is to provide a shipper container which may be insulated for shipment of goods requiring insulation but which when not insulated will have greatly increased volumetric capacity.

I have illustrated my invention in connection with a shipper container which uses as insulation baled raw wool and wherein the insulation is supported and positioned by veneer boards so that an insulated chamber is formed in which frozen foodstuffs requiring insulation may be shipped under circumstances such that upon arriving at destination, for example New York, the wool and the veneer which were all assembled in the container on the west coast will all have substantial value.

There is a substantial flow of foodstuffs requiring insulation from the west coast to the east coast. The same is true of raw wool and veneer boards so I propose to make use of the wool and the boards which need to be shipped anyway as part of the insulation for the foodstuffs.

When the assembly reaches destination on the east coast, the foodstuffs are removed, the veneer is removed and passed on to a point where it is to be used and the same is true of the wool.

Veneer comes in presized sheets which can fit into my assembly. Raw wool is usually shipped in loose sacks or bales which also will fit into my assembly as will hereinafter appear.

My invention is illustrated more or less diagrammatically in the accompanying drawings, wherein—

FIGURE 1 is a side elevation of a vehicle trailer body which may be used in connection with my invention;

FIGURE 2 is a vertical section on an enlarged scale along the line 2—2 of FIGURE 1;

FIGURE 3 is a detail section on a line similar to 2—2 showing one step in the assembly of the insulation;

FIGURE 4 is a similar section showing a second step in the insulation;

FIGURE 5 is a similar section showing the insulation removed;

FIGURE 6 is a detail section similar to FIGURE 2 on a larger scale.

Like parts are indicated by like characters throughout the specification and drawings.

The trailer body **1** has the usual wheels **2**, roller **3**, spare tire **4** adapted to be entered at the rear end in the usual way. The body has side walls **5**, **6**, roof **7**, bottom wall **8**. Supported on the bottom wall **8** and extending throughout the entire floor of the vehicle is suitable permanent insulation **9**. Overlying this insulation **9** is a floor **10** which extends throughout the entire area of the vehicle in the usual manner, covers and maintains the insulation **9** in place. Supported on the floor **10** is a metal tread plate **11**. The tread plate does not extend throughout the entire area of the vehicle floor. Especially as indicated in FIGURE 6, it will be noted that all around the vehicle, the tread plate terminates about a foot short of the vehicle wall **5** or **6**. The space between the wall and the fixed tread plate **11** is filled by a pivoted tread plate section **12** which when in the down position is in prolongation of the tread plate **11** but which may be rotated into a vertical position as shown in FIGURE 6. Under these circumstances the metal tread plate terminates inside the vehicle body all the way around so that there is no direct metallic heat conductive path from the metal tread plate to the vehicle walls and as will hereafter appear, the tread plate is thus insulated from the outside.



Carried by the walls **5**, **6** and **7** are spaced eyelets or hooks **13**. When it is desired to load the wool and build the insulation, the wool sacks or bags or bales **14** are assembled in place loosely, as shown in FIGURE 3, by means of rope or cords **15**, the hinged tread plate **12** having been rotated into the vertical position. Then vertical plywood panels **16** are mounted on both sides and the end of the vehicle on the plywood floor **10** against the outer boundaries of the tread plate **11**. They are then rotated about the point of support until they come into parallelism with the walls **5**, **6**. This compresses the bags and changes them from the generally round shape shown in FIGURE 3 to the shape shown in FIGURE 4 and owing to the flexibility of the bag cover and the flexibility of the wool provides a generally uniform, continuous, insulating mattress between the panels **16** and the vehicle walls. This rotation may be by hand or preferably by use of a jack.

When the panels **16** are in the vertical position, the clips **17** are placed upon the roof panels **18** and the roof panels are pressed upwardly by jacks or other suitable means, the side panels **16** being spread far enough apart so that the upper edges of the side panels may snap into the clips **17**. The jacks will then be removed. The expansion of the wool will hold the parts in position as shown in FIGURE 2. Then the vehicle may be loaded with material requiring insulation and shipped to destination.

Upon arrival at destination, the frozen food will be removed, the vertical panels **16** will be pressed apart, the horizontal roof panels **18** will be removed, the vertical panels **16** will be removed, the sacks or bags of wool will be removed by releasing the ropes, and the panels and the wool having been used to provide the insulation will without further change and without deterioration of any kind whatever be available for distribution to the point to which it was intended in the first place that they should be shipped because instead of shipping and paying freight on the insulation merely because insulation is necessary, freight is paid on the insulation in order to get the insulation which has to be shipped anyway, to a point of use.

Thus the insulation instead of being a dead load for which shipping costs must be paid merely to insulate the foodstuffs, will be shipped to its destination so to speak earning its own way.

In FIGURE 5 is illustrated a section through the vehicle with the insulation removed. It will be noted that the available volumetric area is greatly increased and the truck or trailer body which was used as an insulating container can return without the weight of the insulation and with the greatly added volumetric capacity which previously was occupied by the insulation.

Each bag is preferably of flexible fabric, is closed about its contents and forms a separate, independent unit. The contents of the bag is preferably sorted and graded wool but it might be cotton or other fibrous material. The bags are so packed that they are to a substantial extent flexible and will yield to change in shape under the pressure applied to them between the plywood panels and the walls and ceiling of the container.

While for convenience the floor has been illustrated as a permanent floor, it is obvious that the same treat-

ment, the same type of insulation might be used for the floor as for the walls and ceiling.

I claim:

1. An insulated shipper container comprising a housing having a permanently insulated floor, vertical side walls and a horizontal ceiling, a fixed tread plate on the floor, the outer edges of which are spaced from the walls, tread plate sections pivoted adjacent the intersection of wall and floor whose width is substantially equal to the clearance between the outer edges of the fixed tread plate and the walls, adapted to be selectively positioned horizontally or vertically, a multiplicity of flat plywood panels resting on the floor, the pivoted tread plate sections being vertical, extending upwardly parallel with the walls, abutting at their lower ends against the edge of the fixed tread plate, clips engaging the edges of the panels, ceiling panels at right angles to the walls interengaging said clips defining with the vertical panels a rectangular storage chamber, insulation filling the space between the panels and the wall and ceiling comprising a multiplicity of loosely packed sacks of fibrous insulating material, the panels applying sufficient pressure to the sacks to spread and hold them in contact with one another and cause them to completely cover the wall and ceiling.

2. In a shipper container having vertical walls, a horizontal ceiling and an insulated floor, a fixed tread plate on the floor, the edges of which are spaced inwardly from the vertical walls, tread plate sections pivoted adjacent the intersection of floor and walls, their width perpendicular to the pivot axis being substantially equal to the distance between the fixed tread plate and the wall, cord anchorages on walls and roof, a multiplicity of relatively soft, flexible, compressible sacks of fibrous material, cords wrapped about the sacks, attached to the anchorages to suspend the sacks loosely against the walls and ceiling, a plurality of generally uniform plywood panels resting at their lower edges on the floor along the outer edges of the fixed tread plate, removable clips engaging their upper edges, horizontal panels engaging said clips, the distance between the panels and the walls and ceiling being such that the sacks are compressed into close contact with one another throughout their entire opposed areas and cover the walls and ceiling.

3. An insulated shipper container comprising a housing having a permanently insulated floor, vertical side walls and a horizontal ceiling, a fixed tread plate on the floor, the outer edges of which are spaced from the walls, tread plate sections pivoted adjacent the intersection of wall and floor adapted to be selectively positioned horizontally or vertically, when horizontally positioned adapted to bridge the gap between the wall and the tread plate, a multiplicity of flat plywood panels resting on the floor, extending upwardly in parallel with the walls, engaging the floor and abutting at their lower ends against the periphery of the tread plate, clips engaging the edges of the panels, ceiling panels at right angles to the walls inter-engaging said clips defining with the vertical panels a rectangular storage chamber, insulation filling the space between the panels and the wall and ceiling comprising a multiplicity of loosely packed sacks of fibrous insulating material, the panels thus applying sufficient pressure to the sacks to spread and hold them in contact with one another and cause them to completely cover the wall and ceiling, flexible means separately supporting each sack upon the shipper container walls independent of the panels.

4. A shipper container having permanent top and side walls and an insulated floor, a plurality of separate, self-contained, flexible walled, compressible, expendable packages of loosely compacted, fibrous, insulating material, means for loosely, removably hanging a plurality of them in place on the walls and the ceiling in loose contact with one another, expendable wall and ceiling lining panels parallel with the ceiling, parallel with walls and floor, exerting pressure upon the packages to compact and hold them in firm contact with one another to define a generally continuous insulating wall enclosing the area defined by the panels.



5. A shipper container having permanent top and side walls and an insulated floor, a plurality of separate, self-contained, flexible walled, compressible, expendable packages of loosely compacted, fibrous, insulating material, means for loosely, removably hanging a plurality of them in place on the walls and the ceiling in loose contact with one another, expendable wall and ceiling lining panels parallel with the ceiling, parallel with walls and floor, exerting pressure upon the packages to compact and hold them in firm contact with one another to define a generally continuous insulating wall enclosing the area defined by the panels, the means for hanging the packages comprising hangers on wall and ceiling and flexible cords attached to the hangers and extending around the individual packages.

6. A shipper container having permanent top and side walls and an insulated floor, a plurality of separate, self-contained, flexible walled, compressible, expendable packages of loosely compacted, fibrous, insulating material, means for loosely, removably hanging a plurality of them in place on the walls and the ceiling in loose contact with one another, expendable wall and ceiling lining panels parallel with the ceiling, parallel with walls and floor, exerting pressure upon the packages to compact and hold them in firm contact with one another to define a generally continuous insulating wall enclosing the area defined by the panels, a tread plate on the floor, the edges of which are spaced inwardly from the permanent walls a distance substantially equal to the thickness of the insulating wall, tread plate extensions pivoted on the permanent walls just above the insulated floor of such width as when in the horizontal position to lie upon the insulating floor and fill the gap between the walls and the tread plate, the tread plate extension being adapted when in the vertical position to rest against the inner faces of the permanent side walls.

7. A shipper container having permanent top and side walls and an insulated floor, a plurality of separate, self-contained, flexible walled, compressible, expendable packages of loosely compacted, fibrous, insulating material, means for loosely, removably hanging a plurality of them in place on the walls and the ceiling in loose contact with one another, expendable wall and ceiling lining panels parallel with the ceiling, parallel with walls and floor, exerting pressure upon the packages to compact and hold them in firm contact with one another to define a generally continuous insulating wall enclosing the area defined by the panels, a tread plate on the floor, the edges of which are spaced inwardly from the permanent walls a distance substantially equal to the thickness of the insulating wall, the wall panels resting on the floor and engaging the edges of the tread plate, the upper edges of the wall panels being supported by and in interlocking removable relationship with the peripheral edges of the ceiling panel, the ceiling panel exerting a horizontal outward pressure upon the wall panels.

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