Sept. 2, 1969 L. E. LATTER 3,464,367

APPARATUS AND PROCESS FOR SHORING PACKAGES IN SHIPPING COMPARTMENTS

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FIG.1.

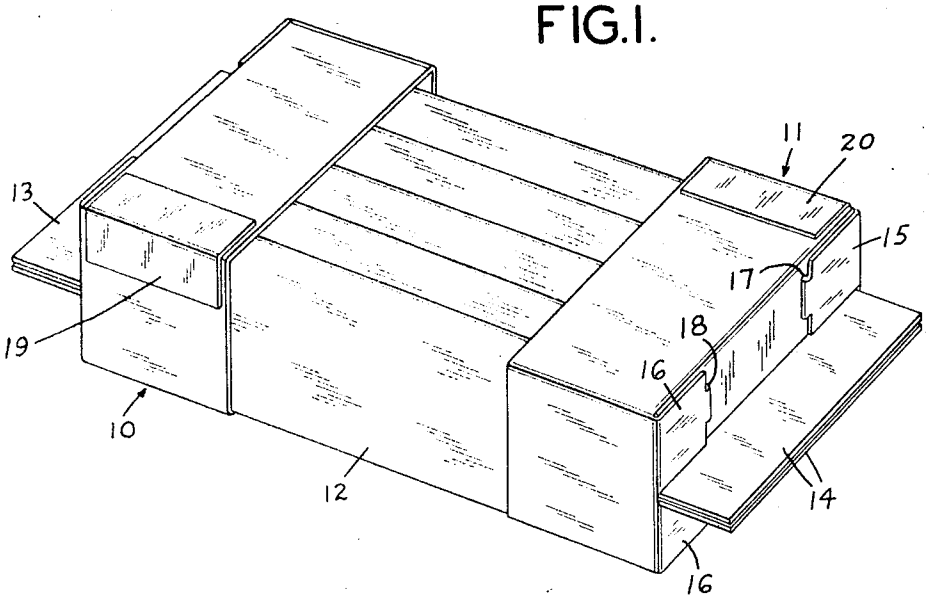


FIG.2.

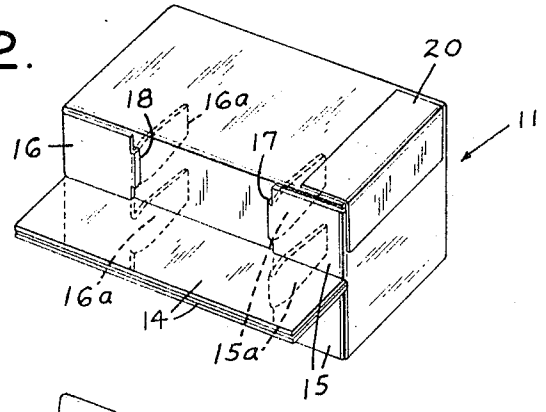
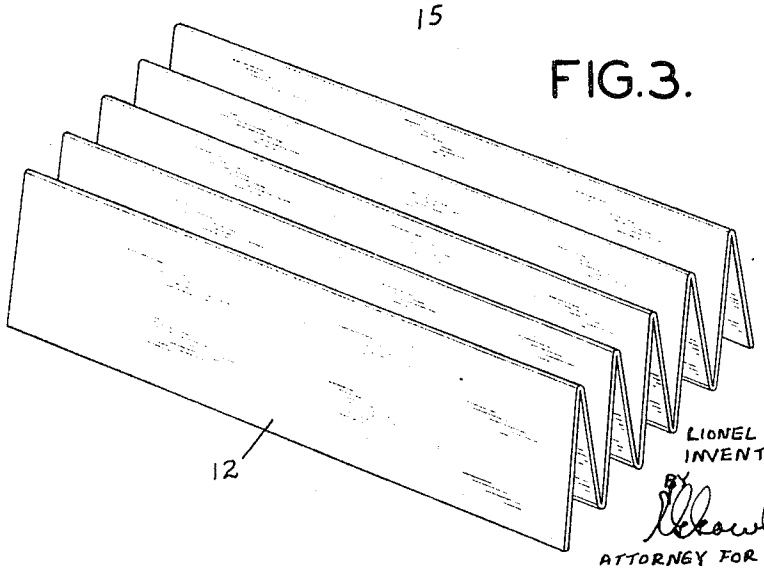


FIG.3.



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FIG. 4.

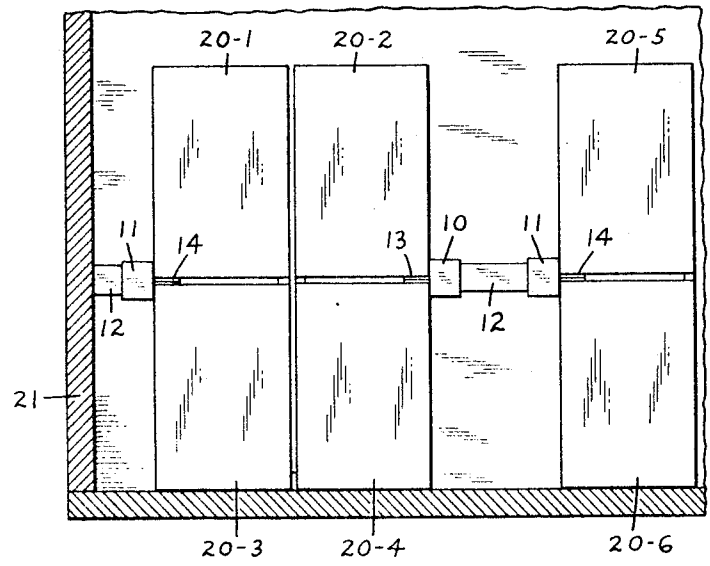


FIG. 5.

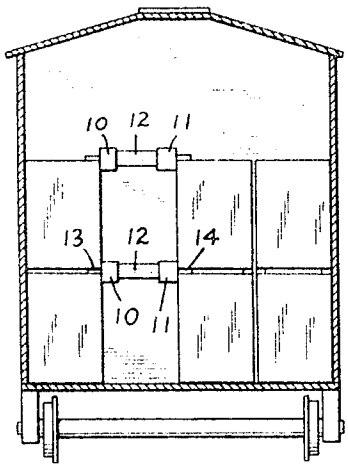
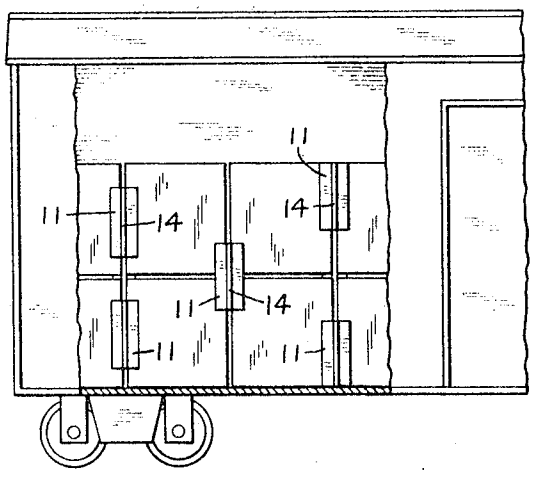


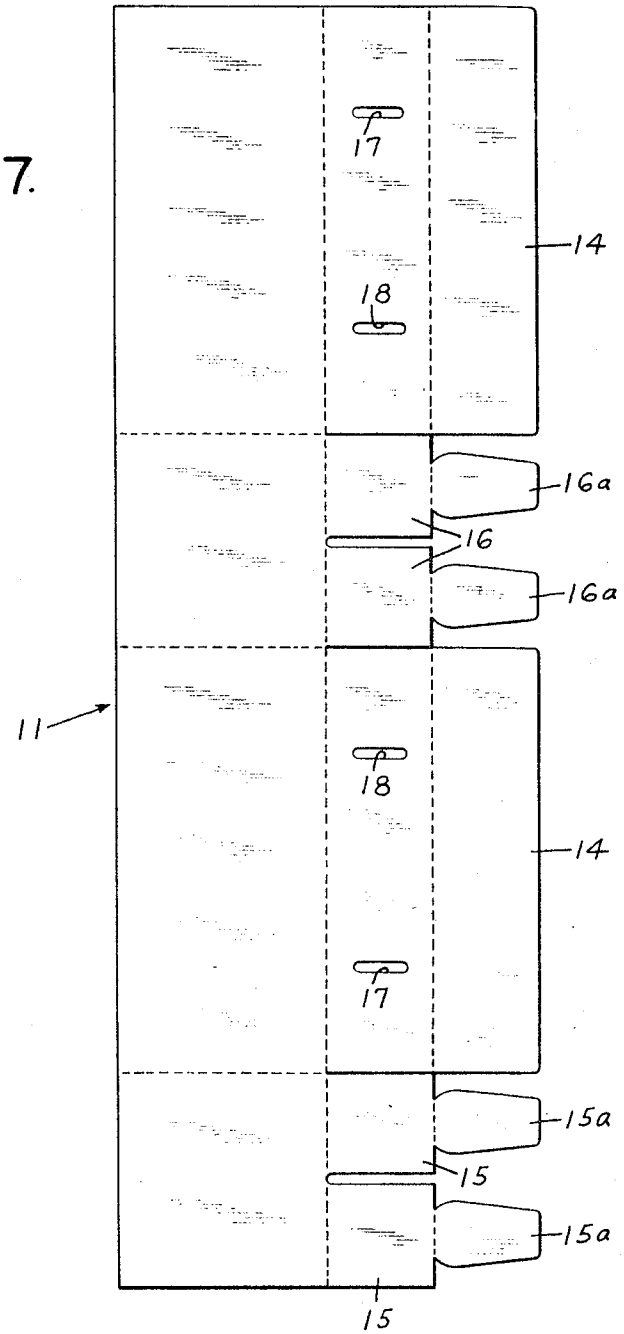
FIG. 6.



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FIG. 7.



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3,464,367

APPARATUS AND PROCESS FOR SHORING PACKAGES IN SHIPPING COMPARTMENTS

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Int. Cl. B61d 45/00; B65d 5/58
U.S. Cl. 105—369 3 Claims

ABSTRACT OF THE DISCLOSURE

A dunnage or package shoring assembly for fitting between stacked shipping packages stored in a transportation vehicle, such as a freight car. One part of the assembly is a relatively long narrow cap or open-sided box of corrugated board with parallel protruding flaps along the closed side for insertion between two shipping packages. The other part is an accordion folded insertable pad also of corrugated board for fitting into the open side of the box. The insert is placed within the cap and between the cap and a car wall or between two caps associated with spaced stacks of packages.

Background of invention

This invention is in the category of load bracing for vehicles, particularly freight cars, although large trucks are also contemplated as well as ship's holds, both ocean and air, and other carrier containers.

In most cases a cargo of discrete elements does not completely fill the freight space so some kind of bracing means is required. If the cargo is packaged, package shoring members or dunnage devices are used. In the past, this dunnage has been mostly of wood such as timber braces, plywood pads, etc. The braces usually require nailing into frames and later dismantling as part of the unloading procedures.

Summary

In order to overcome the difficulties attendant upon using wooded shoring or dunnage, it is proposed to make the dunnage in fittable portions of corrugated fiberboard, corrugated cardboard, or other strong and relatively rigid but lightweight material. Accordingly, the portions designed to fit against the load are open-ended boxes or caps having protruding flaps or fins for insertion between packages of merchandise. Each cap houses the end of an accordion folded pad of fiberboard or the like. If the package is situated near the freight car wall, the pad fits against the wall. If, on the other hand, the dunnage is between two stacks of packages, there is a cap with its fins inserted between each stack with a pad fitted between them with its ends in their open sides.

The invention will be more clearly understood from the ensuing particular disclosure of one of its embodiments, as illustrated by the appended drawing.

Brief description of drawing

FIG. 1 is a perspective view of a complete dunnage assembly;

FIG. 2 shows a cap member in perspective from the flap viewpoint;

FIG. 3 shows in perspective a pad folded for insertion into a cap or caps;

FIG. 4 is a view in elevation showing the dunnage assembly in place between shipping packages and also the use of one cap and pad between a package and the car wall;

FIG. 5 shows in a section of a freight car how the assemblies may be used horizontally;

FIG. 6 is a view like FIG. 5 showing the use of the dunnage devices vertically; and

FIG. 7 is a developed view of a cap.

Description of preferred embodiment

As shown in FIG. 1, the end boxes or caps **10** and **11** are fitted over the respective ends of the accordion pleated pad **12**. Each box has protruding flaps or fins **13** and **14**, respectively. The boxes may be made of corrugated fiberboard and advantageously are of such material.

As may be better seen in FIG. 2, the box has locking tabs **15** and **16** on its flap side. The corrugations of the pad shown in FIGS. 1 and 3 are parallel to the fold lines of the accordion folds which direction may be designated as pad length. The locking tabs **15** and **16** have reduced end portions **15**–*a* and **16**–*a* that are inserted in adjacent slots **17** and **18**, respectively, in the box side pieces. The flaps such as **14** in FIG. 2 are in paralleled face to face relation and in use are held thus by pressure from the package walls between which they are inserted. This tab and dual flap construction plus the accordion-pleated construction of the pad or spacer assures a firm bracing member when in use. The boxes are made from a one piece blank as shown in FIG. 7 in which the reference characters are for cap **11** as in FIG. 2. The caps **10** and **11** have one side seam which is secured by means of suitable adhesive tapes **19** and **20**.

The fractional view of FIG. 4 shows six packages **20**–**1** to **20**–**6** arranged in groups of four and two each in tiers and in rows. The group of four has a cap **11** with its flaps **14** between the upper carton **20**–**1** and the lower one **20**–**3**. The pad **12** is nested in the box or cap **11** and rests against the side wall **21** of, say, a freight car.

Cartons **20**–**2** and **20**–**4** are stacked and rest respectively against cartons **20**–**1** and **20**–**3**. This makes a tier and row combination which obviously may be repeated along the length of the car. The flaps **13** of a cap **10** are sandwiched between the cartons **20**–**2** and **20**–**4**. One end of the pad **12** fits within the cap **10** and the other end within the cap **11**. The flaps **14** of the cap **11** fits between the upper and lower cartons **20**–**5** and **20**–**6**. Only two dunnage devices have been shown in FIG. 4, but obviously more may be used as required.

Because the pads may be trimmed off, different spacings between shipping packages may be accommodated. Thus a supply of caps of a given size may be used with pads of some maximum length that can be trimmed in length to fit various spacings.

The arrangement illustrated in FIG. 5 shows the dunnage devices placed horizontally with the flaps between upper and lower packages on opposite sides of the space between them.

The illustration of vertical orientation of the devices in FIG. 6 is with the row of packages on the viewer's side removed. The back fins of the dunnage devices are between laterally spaced packages and the front fins are shown on the face of the end caps.

It may be in some instances, due to the distribution of packages in a shipping compartment, that both vertical and horizontal orientation may be used.

Sometimes the packages will be placed against the compartment wall and no dunnage used around the periphery of the package array. In this case only double cap devices would be used between suitable package groups.

The foregoing description of a particular embodiment of the invention is not intended to limit the scope of the invention.

What is claimed is:

1. A dunnage device for bracing packages against horizontal movement within a shipping compartment, said dunnage device including an elongated box of fiberboard having one long closed face, an opposite open face, opposed sidewalls and opposed end walls, said closed face, said side walls and said end walls forming a cavity, an accordian folded fiberboard panel having one of its ends inserted into said cavity through said open face and into contact with the inner surface of said closed face, said fiberboard panel projecting at its other end from said open face of said fiberboard box, each of said side walls having a folded portion connected to said side wall along a first fold line at the edge of said side wall at said closed face, the folded portions of said side walls forming said closed face, at least one of said folded portions having a flap connected to said one of said folded portions along a second fold line substantially parallel to said first fold line and extending outwardly from said closed face in a direction opposite to said cavity, each of said end walls having a locking tab connected to said end wall along a fold line at the edge of said end wall at said closed face, each of said tabs having a slot for receiving said outwardly extending flap, a reduced portion at the end of said locking tab and slot means in said folded portions for receiving said reduced portion at the end of said locking tab for locking said locking tab, said flap and said folded portions, in position.

2. A dunnage device as in claim 1 in which each of said folded portions include a flap, said flaps when folded and locked in said slot in said locking tab being in face-to-face contact and extending outwardly from said closed face in a direction opposite to said cavity.

3. A dunnage device as in claim 1 in which said elongated box of fiberboard and said fiberboard panel are corrugated fiberboard.

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U.S. Cl. X.R.

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