June 20, 1967 W. H. GOODING 3,326,368

PALLET SUPPORT AND PACKAGES UTILIZING THE SAME

Filed Nov. 9, 1964 2 Sheets-Sheet 1

FIG. 1.

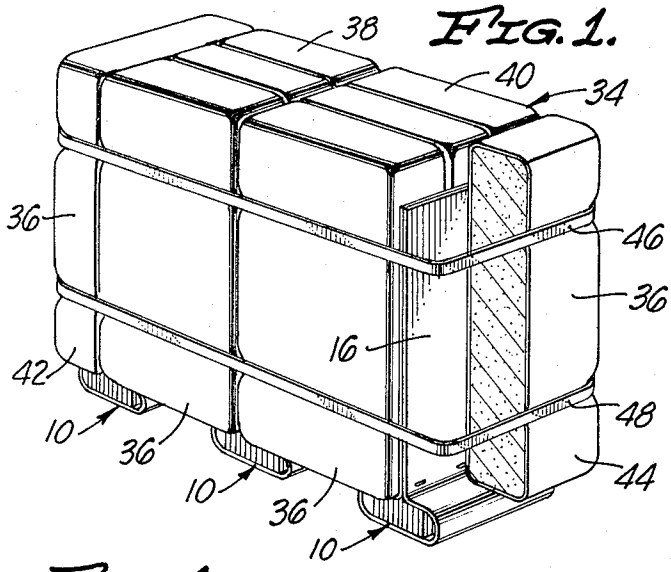


FIG. 2.

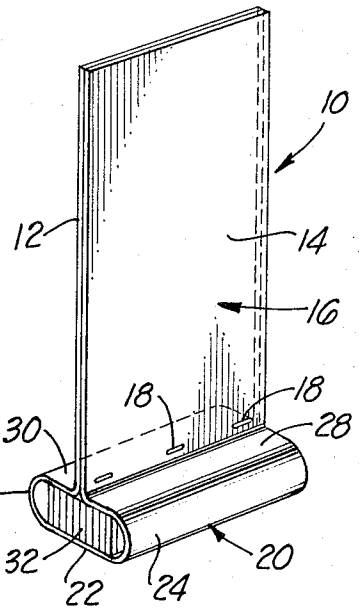


FIG. 4.

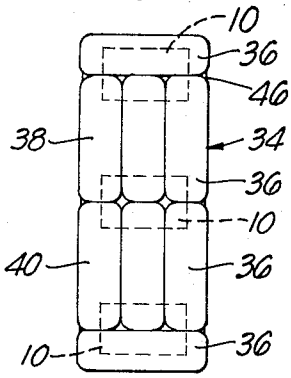


FIG. 3.

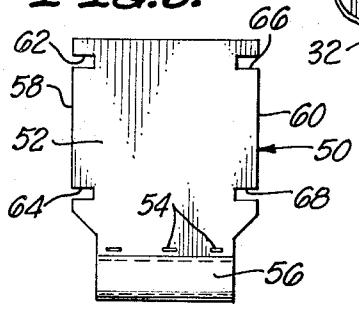


FIG. 5.

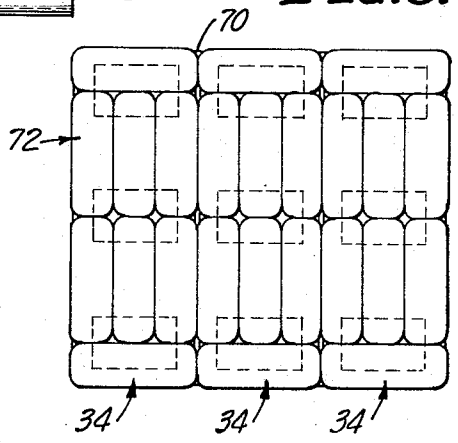
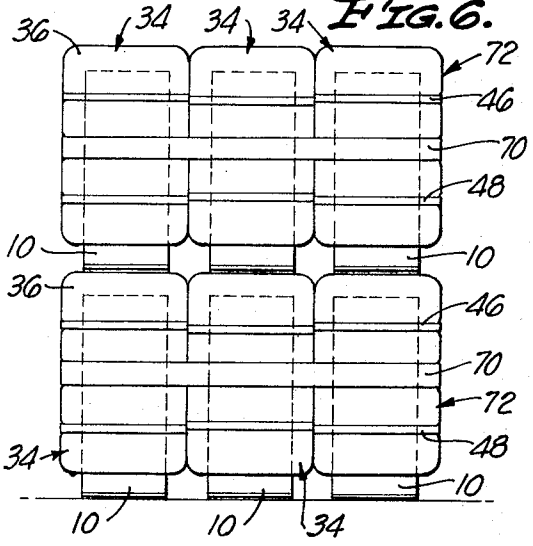


FIG. 6.



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PALLET SUPPORT AND PACKAGES UTILIZING THE SAME

Filed Nov. 9, 1964 2 Sheets-Sheet 2

FIG. 7.

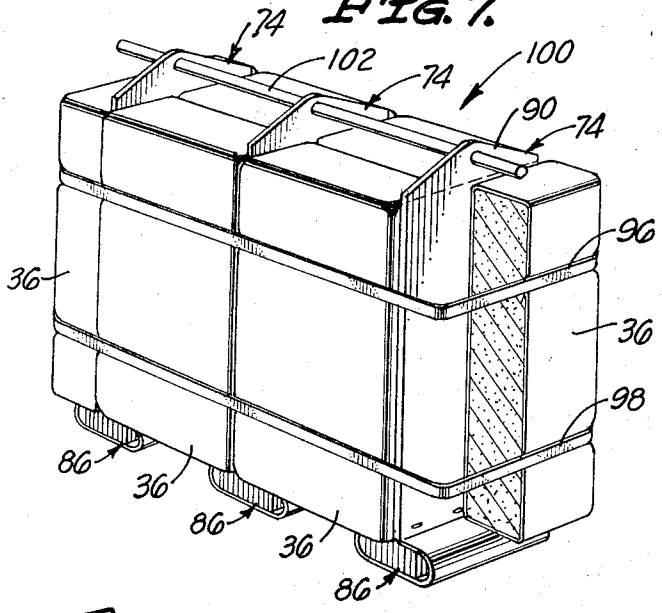


FIG. 8.

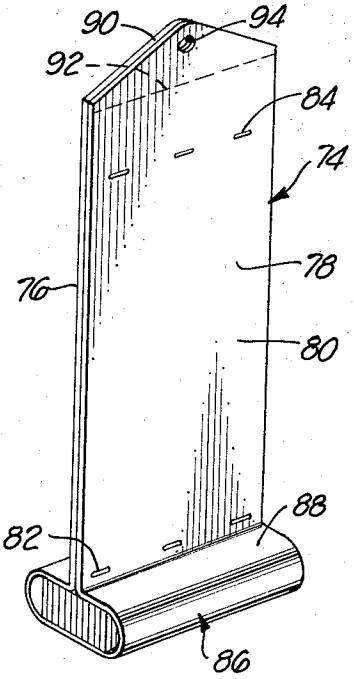


FIG. 9.

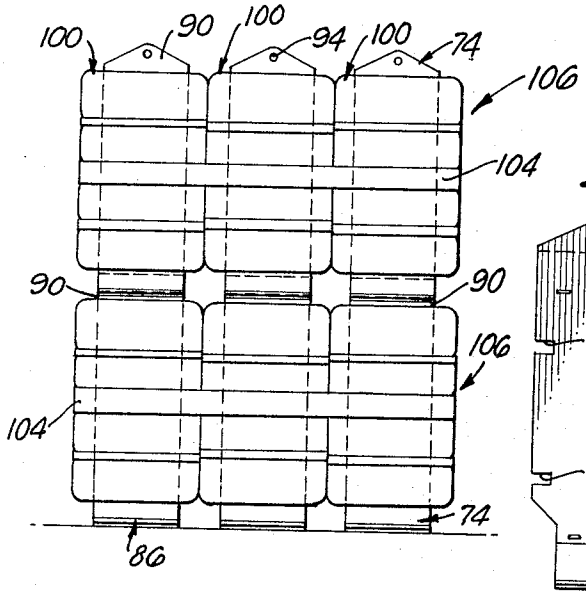


FIG. 10.

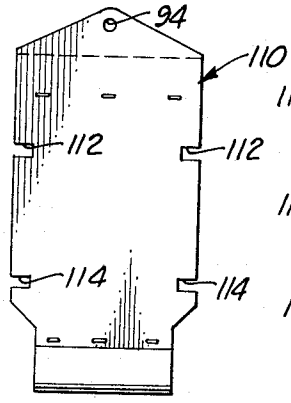


FIG. 12.

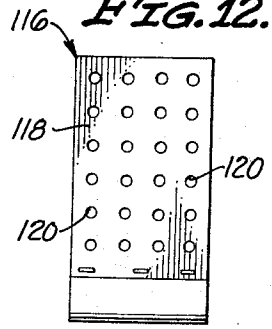
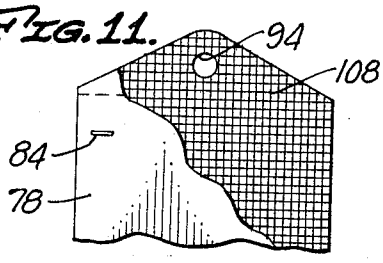


FIG. 11.



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PALLET SUPPORT AND PACKAGES UTILIZING THE SAME

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4 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

The package of this patent is made up of at least two pallet supports and three bags of material. Each of the pallet supports has a substantially coplanar panel and a support for the panel. The support has a base and a top with a panel positioned on the top to define shelves on the top of the base on opposite sides of the panel. Bags of materials are located on the shelves and against the panels and a strap extends around the bags of materials to retain the bags in engagement with the panels. This makes a unitary structure of a plurality of bags of materials which may be readily handled as a unit.

Transportation of goods is necessary to the growth and continued prosperity of the modern economy. Such transportation must be economic so that the goods can be delivered at as reasonable a price as possible. A considerable part of the transportation cost of some items is the necessary handling in moving such materials of commerce from their point of manufacture to their point of use. Labor is a significant factor in most material movements, so it becomes convenient and economic to package these materials of commerce in such a way that they may be moved with a minimum of labor expenditure. In the handling of packaged material, such as bags of cement, bags of concrete mixes and mortar mixes, bags of sugar and the like, such bags have been individually handled in the past. Such individual handling has been aided by conveyors, but still a man had to place the packaged material on the conveyor, and another man had to take it off and pack and position it within the vehicle in which it was to be transported. Similar effort was required upon reaching the destination. The piling of such bags on a pallet has been unsuccessful, for the motion of the transportation vehicle has caused the bags of material to slide around until it was unstable upon the pallet. Then, when the pallet was removed from the vehicle the bagged material would fall off with consequent considerable breakage.

Accordingly, it is an object of this invention to provide a pallet support structure particularly useful in creating a package out of a plurality of bags of material.

It is another object of this invention to provide an inexpensive pallet structure which may be disposable, if desired, but is of such rigid construction as to be reuasble, should economic circumstances so require.

It is another object of this invention to provide a package comprised of a plurality of separate bags of materials of commerce with the separate bags bound together and incorporating a pallet structure therein so as to provide a palletized package.

Other objects and advantages of this invention will become apparent from a study of the following portion of the specification, the claims and the attached drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of a package with parts broken away showing the utilization of the pallet support of this invention;

FIG. 2 is an enlarged isometric view of the embodiment of the pallet support illustrated in FIG. 1;

FIG. 3 is a front elevational view of another embodiment of the pallet support of this invention;

FIG. 4 is a top plan view on reduced scale of the package of FIG. 7 utilizing the pallet support of this invention;

FIG. 5 is a top plan view showing a larger package formed of three of the packages of FIG. 4;

FIG. 6 is a front elevational view showing two of the larger packages of FIG. 5 in stacked arrangement;

FIG. 7 is an isometric view of a package with parts broken away showing utilization of another embodiment of the pallet support of this invention;

FIG. 8 is an enlarged isometric view of the embodiment of the pallet support illustrated in FIG. 7;

FIG. 9 is a front elevational view showing a plurality of the packages of the embodiments of FIG. 7;

FIG. 10 is a front elevational view of another embodiment of the pallet support of this invention;

FIG. 11 is a partial elevational view, with parts broken away, of another embodiment of this invention; and

FIG. 12 is a front elevational view of another embodiment of the pallet support of this invention.

SUMMARY

As an aid to understanding this invention it can be stated in essentially summary form that it is directed to a pallet support and packages utilizing the pallet support. The pallet support comprises an upright panel which terminates in a relatively wide and relatively thick foot. When several of the pallet supports are utilized in a package, the panel is located between several bags containing materials of commerce and one or more are placed around the bags to hold them in position. The foot on each pallet support extends below the bags to hold them above the floor or the supporting surface. The feet are of such dimension and configuration as to provide adequate support to hold the package, and are spaced in such a manner that the feet provide openings therebetween for the forks of a fork-lift truck. Thus, the entire package can be handled as a unit. Strapping holds the bags together to form a unitary package while the panels, which extend between the bags, prevents shifting of the bags within the package. In an alternative embodiment, the panel may be sufficiently wide as to be engaged by the strapping to provide additional interrelated support. Thus, unitary packages are provided by a first set of pallet supports inter-engaged with bags which are strapped together, and a plurality of these unitary packages may be strapped together to form an even larger package. The rigidity and strength of the packages is such that they may be stacked on top of each other.

In another embodiment of this invention the pallet support extends upwardly above the bags of material so that the package utilizing these pallet supports may be readily lifted from the top by engaging in the portion extending upwardly. When such packages are stacked on top of the each other, this upwardly extending portion may get in the way thus it is arranged so that it can readily be folded down. If reinforcing is desired in this embodiment such can be incorporated by installation of reinforcing wire mesh or the like within the pallet support so as to provide greater strength and load distribution for lifting purposes.

DESCRIPTION

This invention will be understood in greater detail by reference to the following portion of the specification wherein the drawings are described. The preferred embodiment of the pallet support is generally indicated at **10** and is best seen in FIG. 2. The pallet support **10** is

preferably made up of a single sheet of material which extends upward to form planar portions **12** and **14**. The planar portions **12** and **14** define the upright panel **16**. The material may be of corrugated cardboard or some other material of relative flexibility, moderate strength and low cost. The planar portions **12** and **14** are preferably secured together, such as by staples **18** and may also be glued together to provide the panel **16** with maximum strength. Intermediate the ends of the material forming the planar portions **12** and **14**, the material is formed into a foot or support **20**. This support has a base **22**, which is of generally planar bottom configuration and acts as the portion that engages the ground or the floor upon which the pallet support **10** is placed. The material is bent around curves **24** and **26** so that it again extends parallel to the base **22** in shelves **28** and **30**. It is from these shelves that the planar portions **12** and **14** extend upward to form the panel **16**.

In order to maintain separation of the base **22** from the shelves **28** and **30**, spacer **32** is placed therebetween. Spaced **32** is preferably of light, inexpensive material and may be made of corrugated cardboard or cardboard honeycomb material having its opening extending upward, parallel to the plane of panel **16**. The spacer **32** is preferably glued in place so as to provide maximum strength from the honeycomb material. Alternatively, this spacer **32** may be built of wood framing or the like, should such be desirable, but for best economy and best strength carboard honeycomb material is considered most desirable.

The relative dimensions and sizes of the pallet support **10** can best be understood with reference to complete packages which utilize the pallet support. Referring now to FIG. 1, package **34** employs three of the pallet supports **10** which are utilized to package together eight bags **36** of materials of commerce. In the specific illustration, and in the preferred embodiment, the bags **36** are standard 94-pound bags of cement. In the package **34** a first row **38** of three bags **36** in assembled in face to face relationship, and a second row **40** of bags **36** is similarly assembled. A center pallet support **10** is located therebetween in such a manner that the lower inside corners of the bags **36** in each of the rows **38** and **40**, respectively, rest upon shelves **30** and **28** of the pallet support **10**, therebetween.

Similarly, an additional, end pallet support **10** is placed under the outside edge corners of rows **38** and **40** to support the bags in these rows upon their respective shelves. Single bags **42** and **44** are placed outside of the latter pallet supports **10** and are positioned with their flat sides against the panel **16** thereof. The single bags **42** and **44** also rest upon the respective shelves of these outer pallet supports. Straps **46** and **48** are engaged around the bags in the package **34** to make a unitary structure of the entire package **34**.

In the package **34** it can be seen that the supports **20** are spaced apart so as to permit opening therebetween. This makes the entire package **34** adaptable to be picked up as a single unit by fork lift equipment. A top plan view of the package **34** is seen in reduced scale in FIG. 4.

An alternative embodiment of the pallet support **10** is indicated at **50** in FIG. 3. The pallet support **50** is of the same general construction as the pallet support **10** and comprises a generally planar upright panel **52** which is preferably made up of two thicknesses of corrugated cardboard. The panel **52** is stapled together at **54** and has a support **56**. The support **56** is identical to the support **20**, previously described. In the embodiment of the pallet support **50**, the panel **52** is wider in the direction along the length of the support **56** so that it has terminal edges **58** and **60**. The distance between the edges **58** and **60** is greater than the width of a single bag **36**, and is greater than the total thickness of three bags. Thus, the edges **58** and **60** extend beyond the bags **36** when they are made up into a package similar to the package **34**. Notches **62**, **64**, **66** and **68** are cut into the edges **58** and **60** to provide a location to engage the straps which extend around the package. Thus, the pallet support **50** is also engaged by the straps extending around the package to make the package a firm, single unit.

The package **34** of FIGS. 1 and 4 is a single unit, and where it is desirable that a larger package be handled for convenience and labor saving, a plurality of single unit packages **34** can be positioned together and held together to make a multiple unit package, as is seen in FIG. 5. In this case, strap **70** extends all the way around three of the packages **34** to form a multiple unit package **72**. As is illustrated in FIG. 6, the strap **70** is preferably wider so as to aid in distributing the load upon the bags **36** to prevent their tearing. As is further illustrated in FIG. 6, it is seen that the multiple unit packages **72** may be stacked one upon the other for the size of the support **20** permits distribution of load to an adequate extent to prevent damage to the tops of the bags **36** in each of the unitary packages **34**.

In use, the unit size packages **34** are assembled at the place where the material is bagged so that the material can be handled in such packages directly from the immediate bagging location to the point where materials in quantities smaller than the packages **34** are required. In other words, the package **34** is assembled as soon as possible, and it is moved through the transportation and channels of commerce as far as possible, until the package size of the unitary package **34** is too large. Thereupon, the straps **46** and **48** are removed and the material is handled again as individual bags **36**. Thus, the benefits of storage and transportation of the material in large units is gained, together with retention of the benefit of being able to readily reduce the unitary package **34** into individual bags **36**. Furthermore, as previously described, in some cases it may be desirable to assemble a plurality of the packages **34** into a large multiple unit package **72** for additional benefits with respect to transportation. The larger, multiple unit package can be broken down into single unit packages when such is desired.

While the pallet supports **10** are of inexpensive construction, they may be reused as is necessary. Furthermore, the lightness of their construction does not add materially to the total weight of the package **34** so that very little increase in transportation cost due to increase in weight is experienced by their use.

Referring now to the embodiment of this invention as shown in FIGS. 7, 8 and 9, this embodiment of the pallet support is generally indicated at **74**. In this embodiment, also, the pallet support **74** is formed of planar portions **76** and **78** which are secured together to form a panel **80**. Securement is preferably in the form of glue between the planar portions and further securement is obtained by staples **82** and **84**. The bottom termination of pallet support **74** is support **86**, identical with the support **20** of the previous embodiment. In the embodiment of FIGS. 7 through 9 the height of the panel **80** is such that it extends above shelves **88** to such an extent that the top **90** extends above bags **36**, see FIG. 7. At a distance up panel **80** above shelf **88** equal to the height of bags **36** the panel is arranged for folding by means of fold line **92**. The portion of panel **80** extending above fold line **92**, the top **90**, is provided with engagement means such as hole **94** so that a package using pallet support **74** may be readily engaged and lifted.

Such package is seen in FIG. 7 where a plurality of bags **36** is secured to a plurality of pallet support **74** by means of straps **96** and **98**. Thus, package **100** is formed which is of the same nature as the package in FIG. 1. In the package **100**, however, as is previously described, the tops **90** extend above the bags **36**. Thus, bar **102** is engaged through the hole **94** for division of load between the several pallet supports **74** to aid in the lifting of the package **100**. Any hook can be engaged with bar **102** and

the entire package **100** mechanically raised and moved with economy of labor.

A plurality of packages **100**, as is shown in FIG. 9, can readily be secured together by strap **104** to form a larger package **106**, comparable to the multi-unit package **72** of FIG. 6. The multi-unit package **106** may also be handled by means of the holes **94** together with appropriate lifting equipment. When one multi-unit package **106** is placed on top of another such multi-unit package **106**, as is shown in FIG. 9, the top **90** of each of the pallet supports **74** can readily be folded down along the fold line **92** so that they can be securely stacked without damage to the pallet supports **74** in the lower multi-unit package **106**.

As is seen in FIG. 11, it may be desirable to place a wire cloth **108** between the planar portions **76** and **78** of the pallet support **74** so as to serve as a load distributing means to distribute the lifting load at hole **94**. Such wire cloth does not interfere with the foldability along the fold line **92**.

The embodiment of FIG. 3 has a corresponding embodiment shown in FIG. 10. The pallet support **110** in FIG. 10 is identical to the pallet support **74** of FIG. 8, except for its greater width. The width of pallet support **110** is greater than the width of bags **30** so that the terminal edges of the pallet support **110** extend therepast. Cut into these terminal edges are notches **112** and **114** in such a position that the straps **96** and **98**, respectively, can engage in the notches to further restrain the pallet support **110** with respect to the bags **36** with which it is assembled. Thus, the pallet support **110** is readily usable in each of the environments indicated with respect to the previously described pallet supports to provide a package of substantial strength, rigidity and utility.

A further modification of the pallet support is shown in the embodiment of FIG. 12. In this embodiment the pallet support is generally indicated at **116**. The pallet support **116** has an upstanding panel **118** which has a plurality of holes **120** therethrough. When a package is made up, similar to the previously described packages, utilizing the pallet support **116**, the adjacent bags partially enter the holes so that very much increased friction is developed between the bags and panel **118** in the plane of the panel. This helps the rigidity of the finished package structure. It is clear that holes, such as holes **120**, through any of the previously described panel embodiments improves them in this respect.

As has been indicated with respect to the pallet supports of FIGS. 1 through 6, the pallet supports of FIGS. 7 through 12 are preferably made of corrugated cardboard of such grade as to be suitable for this use. Such corrugated cardboard is preferable because it is an inexpensive material and provides a light, strong package which does not substantially add to the shipping cost. Furthermore, such material is useful in repeated use, yet it is sufficiently inexpensive as to permit the pallet supports to be disposed of should return thereof be inconvenient.

This invention having been described in its preferred embodiment, it is clear that it is susceptible to numerous modifications and changes without the exercise of the inventive faculty. Accordingly, the scope of this invention is defined by the scope of the following claims.

I claim:

1. A unitary package comprising first, second and third bags of material and first and second pallet supports, said first and second pallet supports being substantially identical, each of said pallet supports comprising a panel and a support, said panel being substantially planar and being secured to said support, said support having a base and a top, said panel being positioned on said top so that said top defines first and second shelves, said shelves being spaced from said base, said panel of said first pallet support being positioned between and in engagement with said first and second bags of material, said first and second bags of material respectively resting upon said first and second shelves of said first pallet support, said second pallet support being positioned between and in engagement with said second and third bags of material, said second and third bags of material respectively resting upon said first and said second shelves of said second pallet support and a strap extending around said bags of material to retain such bags of material in engagement with said panels.

2. The package of claim **1** wherein said pallet supports comprise unitary pieces of corrugated cardboard material arranged so that two thicknesses of said material define each of said panels, and a spacer is provided in said support to space said shelves from said base.

3. The package of claim **2** wherein there are eight bags of material and three pallet supports, said bags of material and said pallet supports defining a unitary package.

4. The unitary package of claim **3** wherein said unitary package is positioned adjacent a second substantially identical unitary package in such a position that said panels in said unitary packages are substantially co-planar with respect to each other and a second strap is positioned around both said unitary packages.

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