Feb. 4, 1969 C. A. ORAVEZ 3,425,367

PALLET OF CORRUGATED PAPERBOARD AND THE LIKE

Filed March 16, 1967

Sheet 1 of 2

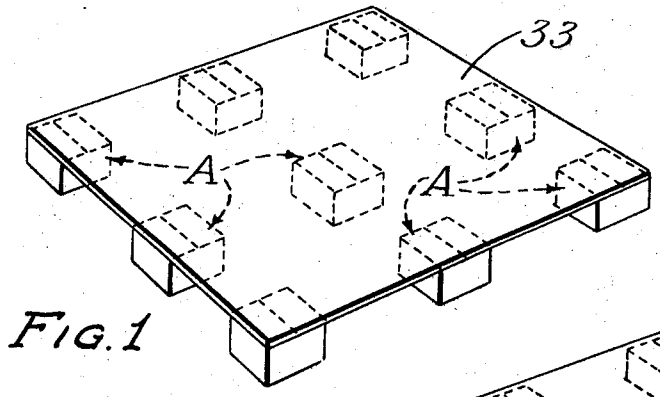

FIG. 1

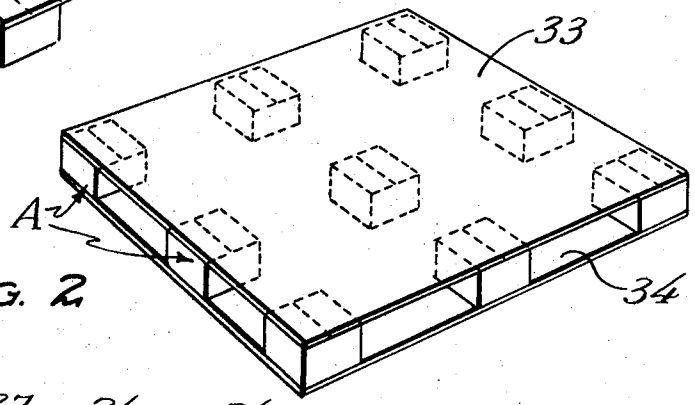

FIG. 2

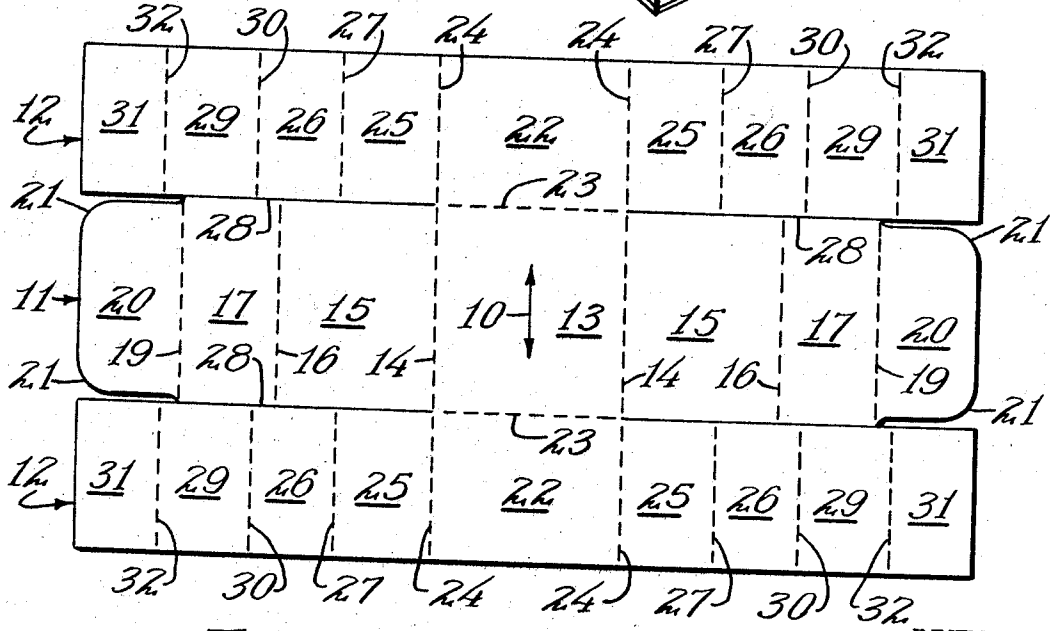

FIG. 6

INVENTOR

CARL A. ORAVEZ

BY Robert M. Dunning

ATTORNEY

Feb. 4, 1969 C. A. ORAVEZ 3,425,367

PALLET OF CORRUGATED PAPERBOARD AND THE LIKE

Filed March 16, 1967 Sheet 2 of 2

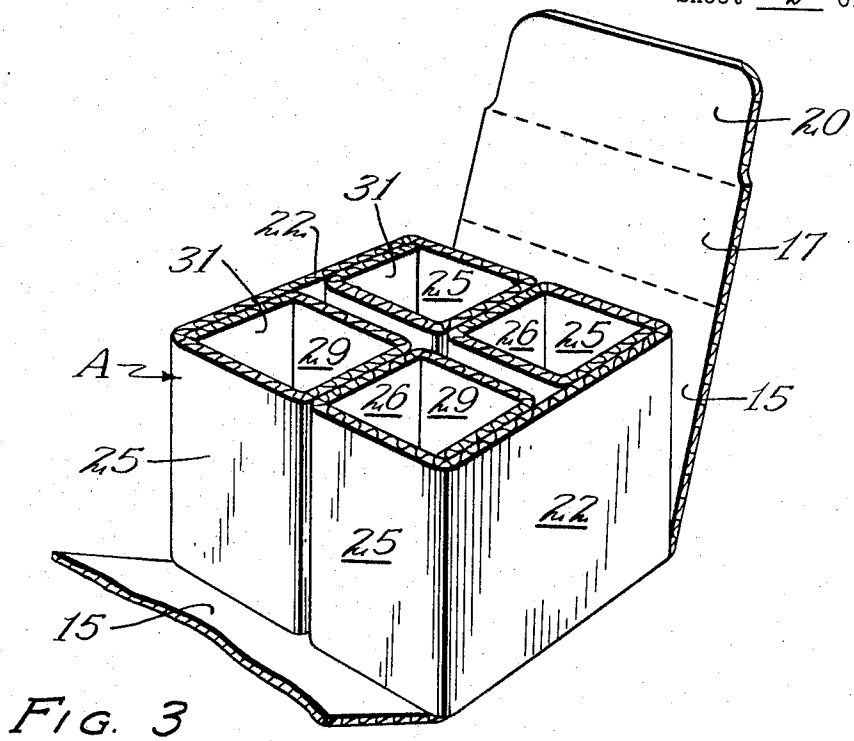

FIG. 3

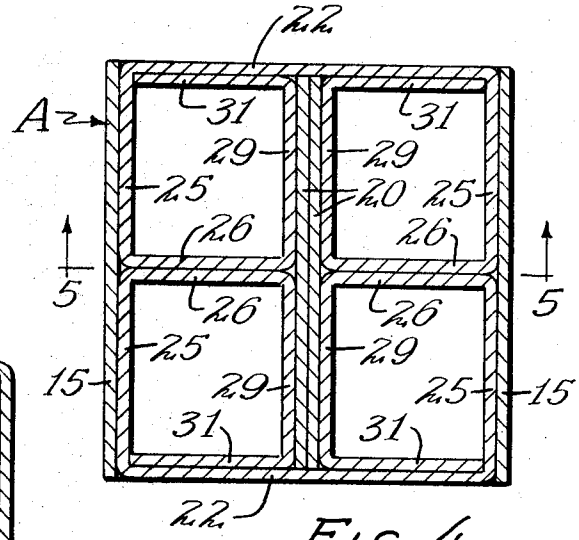

FIG. 4

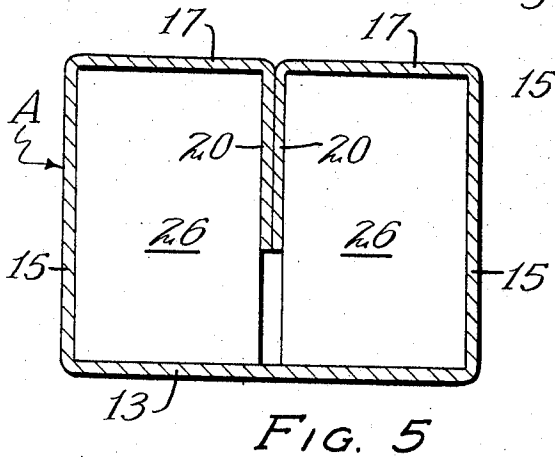

FIG. 5

INVENTOR

CARL A. ORAVEZ

BY Albert M. Dunning

ATTORNEY

United States Patent Office 3,425,367
Patented Feb. 4, 1969

3,425,367

PALLET OF CORRUGATED PAPERBOARD AND THE LIKE

Carl A. Oravez, Milwaukee, Wis., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed Mar. 16, 1967, Ser. No. 623,624
U.S. Cl. 108—51 3 Claims
Int. Cl. B65d 19/34

ABSTRACT OF THE DISCLOSURE

The pallet comprises a platform sheet usually formed of corrugated paperboard or solid fibre to which is secured a plurality of spaced legs arranged in a pattern to permit handling of the platform by a fork lift truck or other material handling equipment. Each leg comprises a sheet of foldable material cut and creased to provide a rectangular bottom panel having side walls hinged to the edges thereof. Two opposed side walls include extensions each foldable to provide a hollow vertical cell resting upon the bottom panel and substantially coextensive in height with the side walls. The remaining opposed side walls are provided with partial top panels which overlie the cells and support tuck flaps insertable between the cells to hold the structure assembled.

BACKGROUND OF THE INVENTION

This invention relates to an improvement in pallets and deals particularly with a pallet constructed of corrugated paperboard or the like which can be produced at low cost.

Pallets are very commonly used in materials handling operations. In view of the fact that wooden pallets are quite expensive to produce, many such pallets are now being produced made of corrugated paperboard or solid fibre. While pallets of this type are not as durable as wooden pallets, they are sufficiently less expensive so that they may be disposed of after use. Such an arrangement is particularly desirable where goods are being shipped from a manufacturing plant to a distant point, as it eliminates the necessity of returning the empty pallets to the manufacturer.

Perhaps the most widely adapted disposable pallets incorporate spirally wound single face corrugated legs of the general type illustrated in the Donahue Patent 2,432,295, issued Dec. 9, 1947. Box-like reinforced sleeves such as illustrated in the Cohners Patent 2,503,240 issued Apr. 11, 1950, have been proposed but not widely adopted as they lack the strength of other constructions.

SUMMARY OF THE INVENTION

An object of the present invention lies in the provition of a pallet having supporting legs which comprise box-like structures which may be set up by merely folding the corrugated paperboard to form a rectangular container. When such a container is adhered to the surface of the pallet, it is held from opening, the adhesive holding the structure closed.

A further feature of the present invention resides in the provision that each leg is formed of a generally rectangular blank of corrugated board so constructed that there is virtually no waste. The blank is divided into an elongated center strip, and two elongated side trips on opposite sides of the center strip. The center strip is creased to provide a bottom panel, two opposed side wall panels, two partial top panels, and two tuck flaps. The side strips are creased to provide two side walls, and four additional panels on each side of the side walls which form rectangular cells. When erected, the four cells extend vertically the full height between the bottom panel and the top panels and provide a structure which is possessed of great compressive strength. As a result, each leg is capable of supporting a very considerable weight.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification,

FIGURE 1 is a perspective view of a pallet showing the general arrangement of parts.

FIGURE 2 is a view similar to FIGURE 1 but showing a construction in which the legs are supported between a pair of pallet sheets.

FIGURE 3 is a perspective view of one of the legs in partially folded condition.

FIGURE 4 is a horizontal sectional view through one of the legs.

FIGURE 5 is a vertical sectional view through one of the legs.

FIGURE 6 is a diagrammatic view of the blank from which the pallet legs are formed.

DESCRIPTION OF THE INVENTION

FIGURE 6 of the drawings discloses the blank from which each of the pallet legs is formed. The arrow **10** indicates the direction of the flutes of the corrugated board, the arrangement being such that the flutes of the board extend vertically between the top and bottom panels in the major portion of the structure. The blank illustrated includes a central strip **11**, and a pair of side strips **12** on opposite sides of the center strip. The strips are preferably of equal length.

The center strip **11** includes a bottom panel **13** which is hingedly connected along fold lines **14** to side walls **15**. Side walls **15** are hingedly connected along parallel fold lines **16** to partial top panels **17**. The partial top panels **17** are foldably connected along fold lines **19** to tuck flaps **20**. The tuck flaps **20** may be slightly less width than the panels **13**, **15** and **17**, and are preferably provided with rounded end corners **21** to facilitate the operation of inserting the tuck flaps into position, as will be described. The partial top panels **17** are of a width substantially equal to one-half the width of the bottom panel **13**, this bottom panel being usually square in shape. The fold lines extending across the center strip are substantially parallel.

The side strips **12** are substantially identical to each other in form. Each side strip **12** includes a central side wall panel **22** which is hingedly connected to the bottom panel **13**, the side wall panels **22** being connected to the bottom panel along parallel fold lines **23** which intersect the fold lines **14** at right angles. The fold lines **23** which extend the length of the bottom panel **13** form the only connection between the side strips **12** and the center strip **11**, slits **28** which are aligned with the fold lines **23** extending the remaining length of the blank between the center strip **11** and the side strips **12**.

The side strips **12** are divided into cell forming panels by fold lines which extend transversely thereof, the fold lines extending parallel with the flutes of the corrugated blank. The side walls **22** are hingedly connected along fold lines **24**, which are substantially aligned with the fold lines **14**, to first cell forming panels **25**. The first cell forming panels **24** are connected to second cell forming panels **26** along fold lines **27**. The second cell forming panels **26** are connected to third cell forming panels **29** along fold lines **30**. The third cell forming panels **29** are connected to the fourth cell forming panels **31** along fold lines **32**. Each series of first, second, third and fourth partition forming panels are designed to form a hollow

vertical column of rectangular form as is best illustrated in FIGURES 3 and 4 of the drawings. When folded, the first panels **25** lie inwardly of the side wall panels **15** of the center strip. The second panels **26** of the two opposed strips extend along the center of the structure in face to face contact. The third partition forming panels **29** extend parallel to the first panels **25** of the series. The fourth partition forming panels **31** extend in face contact with the side walls **22**. The partition panels **29** on opposite sides of the side walls **22** are in slightly spaced relation along the center of the structure as indicated in FIGURE 3.

After the various cells have been formed as indicated in FIGURE 3 of the drawings, the side walls **15** of the center strip are folded outwardly of the panels **25**, the partial top panels **17** are folded to overlie the upper ends of the adjacent two cells, and the tuck flaps **20** are tucked down into the space between the partition forming panels **29** at opposite ends of the side strips **12**. If desired during this action, the strips **26** on opposite sides of the structure may be adhered or stitched in face contact. Similarly, the panels **31** may be stitched or adhered to the side walls **22**. However, such fastening is mainly for the purpose of convenience and may be omitted if the side walls **22** are held in parallel relation extending upwardly from the bottom panel **13** as shown in FIGURE 3.

When the various legs have been completed, they are glued or otherwise adhered to the surface of the pallet sheet **33** in a desired pattern to provide a pallet of the size and shape desired. Nine such pallet legs which are indicated in general by the letter A are shown adhered to the sheet **33**, the pallet legs being spaced to accommodate the forks of a fork-lift truck therebetween. In preferred form, the upper partial panels **17** are adhered to the undersurface of the sheet **33**, this action holding the legs assembled and preventing the unfolding of the legs. As is indicated in FIGURE 2 of the drawings, a second pallet forming sheet **34** may be adhered to the bottom panels **13** of the legs if a more durable pallet structure is desired.

The pallets thus formed possess high stacking strength, for example, a pallet supported by four such legs will support a load of approximately five thousand four hundred pounds, while each leg is usually set up manually, this may often be done in spare time, and requires but little time once the sequence of folds is learned.

In accordance with the patent statutes, I have described the principles of construction and operation of my pallet; and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the following claims without departing from the spirit of my invention.

I claim:

1. A pallet supporting leg for use in supporting a pallet sheet, the leg comprising:

a rectangular base panel,

side wall panels hinged to opposite edges of said base panel and folded into right angular relation thereto,

first, second and third cell forming panels connected in series to each end edge of said side wall panels along parallel lines of fold,

each series of cell forming with the side wall to which they are connected, a hollow rectangular cell having one end resting against said base panel,

means securing said cells in parallel relation, the securing means including a second pair of side walls hinged to the remaining opposed sides of said base panel and secured in face contact with the first cell forming panels of two opposed series of said panels, and

a pair of cover panels hinged to each of said second pair of cover panels and engaging the ends of the cells opposite those resting against said base panel.

2. A pallet supporting leg for use in supporting a pallet sheet, the leg comprising:

a blank cut and creased to provide three sde-by-side strips of panels including a center strip of panels and two opposed side strips,

the center strip including a rectangular base panel, and side walls hinged to opposite ends of said base panel along parallel fold lines,

the side strips each including a central side wall, and first, second and third cell forming panels hinged to opposite ends of said central side wall in series along parallel fold lines,

said center side walls of said opposed side strips being hinged to the remaining edges of said base panel and said side strips being otherwise free of direct connection with said center strip,

each series of first, second and third cell forming panels being foldable into a rectangular cell having one end resting upon said base panel at a corner thereof.

said side walls of said center strip being foldable into face contact to the first cell forming panels of each of said rectangular cells.

3. The structure of claim **1** and including tuck flanges secured to said cover panels and extending in a direction toward said base panel between one pair of said cells connected to two opposed ends of said first side walls and the other pair of cells.

References Cited

UNITED STATES PATENTS

2,493,562	1/1950	Yarman	108—58
2,559,930	7/1951	Bolton et al.	108—57
2,576,715	11/1951	Farrell	108—56
2,997,266	8/1961	Munroe.	

FOREIGN PATENTS

591,350	9/1960	Canada.
1,237,837	6/1960	France.
1,311,981	11/1962	France.
989,290	4/1965	Great Britain.

BOBBY R. GAY, *Primary Examiner.*

G. O. FINCH, *Assistant Examiner.*