United States Patent [19]

Legg et al.

[11] **3,861,554**

[45] **Jan. 21, 1975**

[54] **PALLET DISTRIBUTION CAGE**

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[22] Filed: **Oct. 15, 1973**

[21] Appl. No.: **406,259**

[52] **U.S. Cl.** ..... **220/4 R,** 292/342, 220/1.5

[51] **Int. Cl.** **B65d 7/00**

[58] **Field of Search** ..... 220/4 R, 1.5, 4 F; 217/43 A; 292/342; 24/230 BC

[56] **References Cited**

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[57] **ABSTRACT**

A cage-like structure is provided which is intended to be removably mounted on a storage pallet to constitute a container for goods on the pallet. The structure includes a gripping foot bracket assembly at each of its lower corners. The gripping foot bracket comprises a pair of interrelated sections, one of the sections being slidably mounted to the adjacent side of the structure, so as to be drawn into a tight gripping relationship with the edge of the pallet when the sides are moved down toward the plane of the load supporting surface of the pallet. The structure also includes a hinged end panel and a movable locking strip of a unique construction for holding the panel in a closed condition. The sides of the structure are intercoupled by unique locking brackets which permit each panel to be rigidly coupled to the adjacent panels, and yet to be easily separated from the adjacent panels when the structure is removed from the pallet.

5 Claims, 5 Drawing Figures

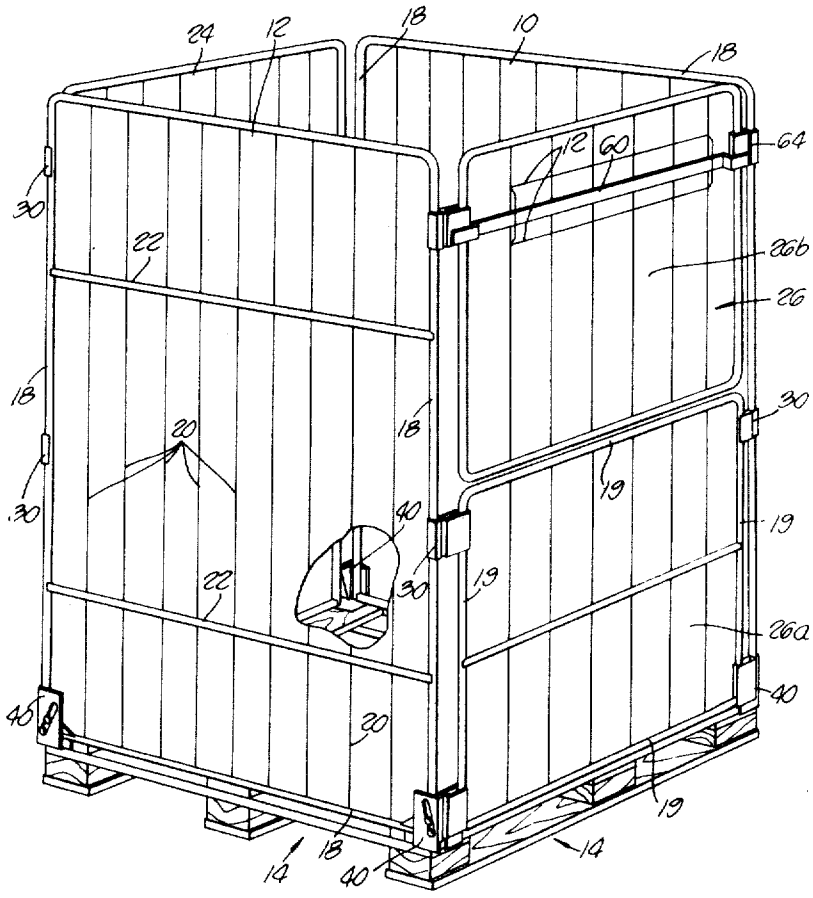


FIG. 1.

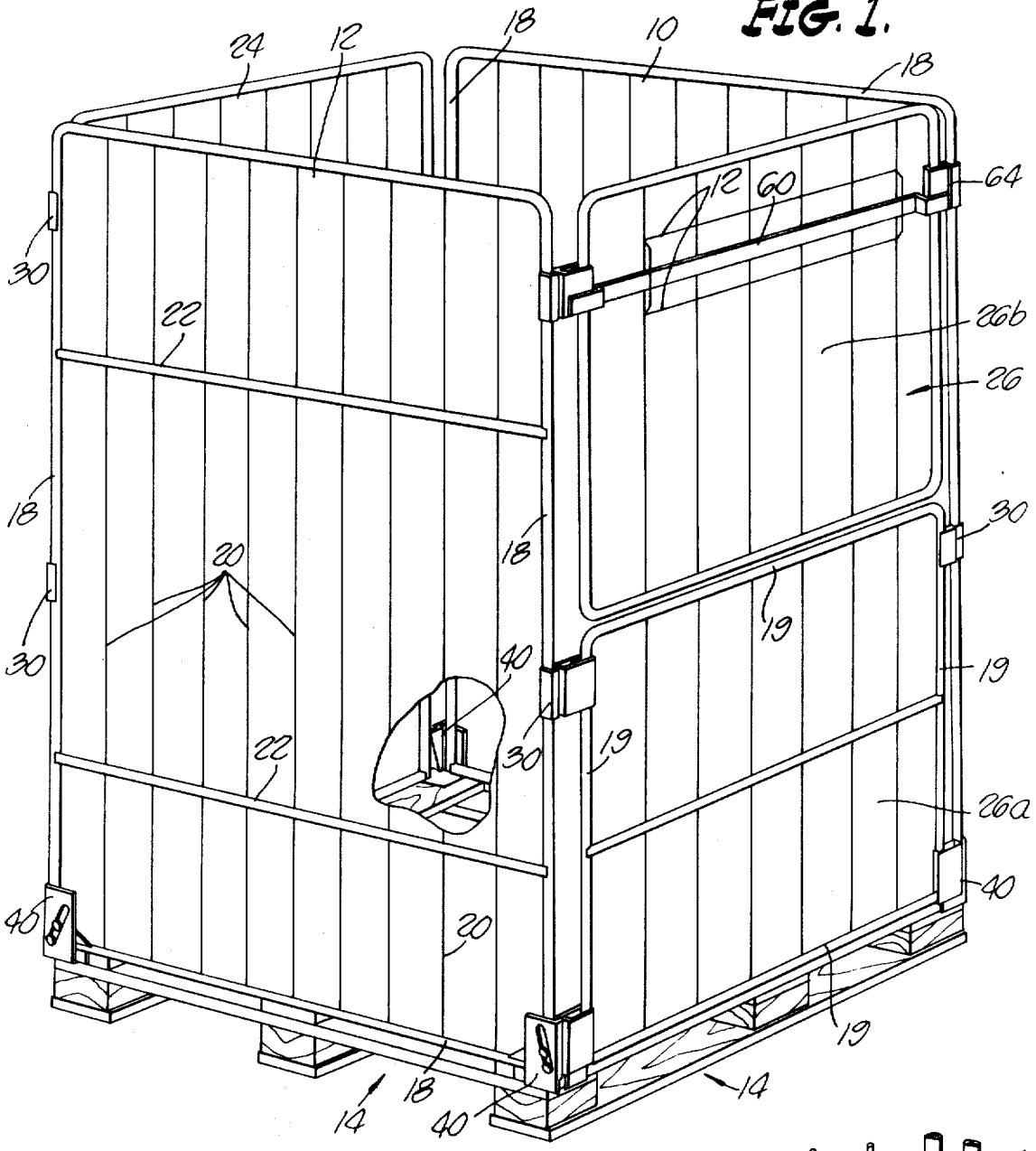

24
12
18
10
18
64
12
60
30
22
26b
26
18
18
30
20
19
30
40
19
19
22
30
26a
40
46
20
19
18
14
14
40

FIG. 2.

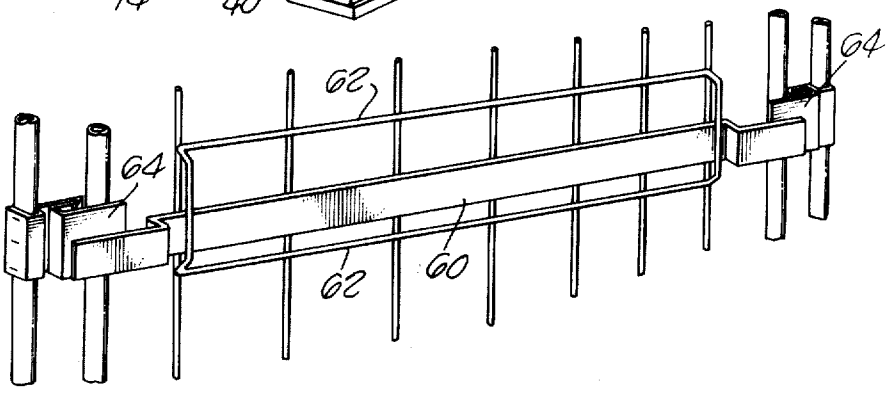

64
62
64
62
60

FIG. 3.

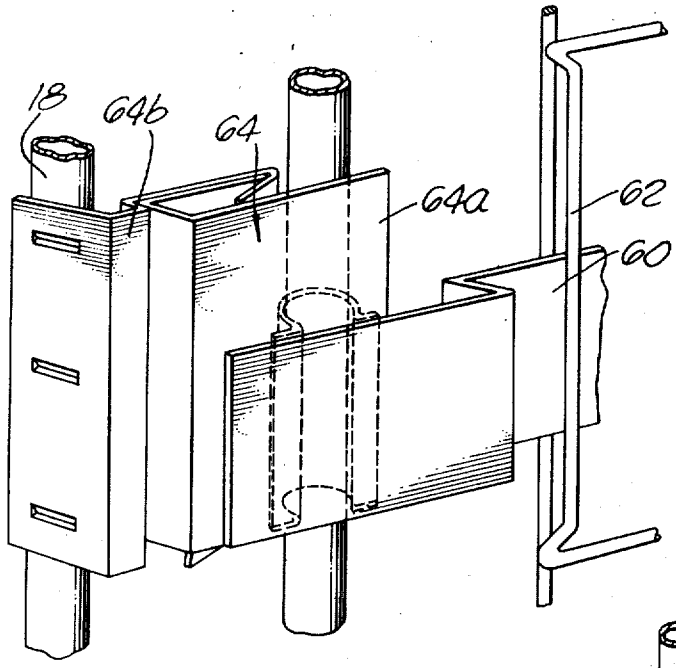


FIG. 4.

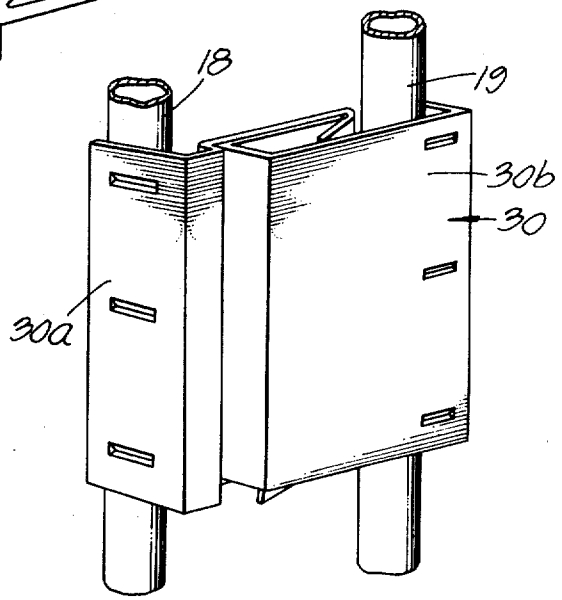
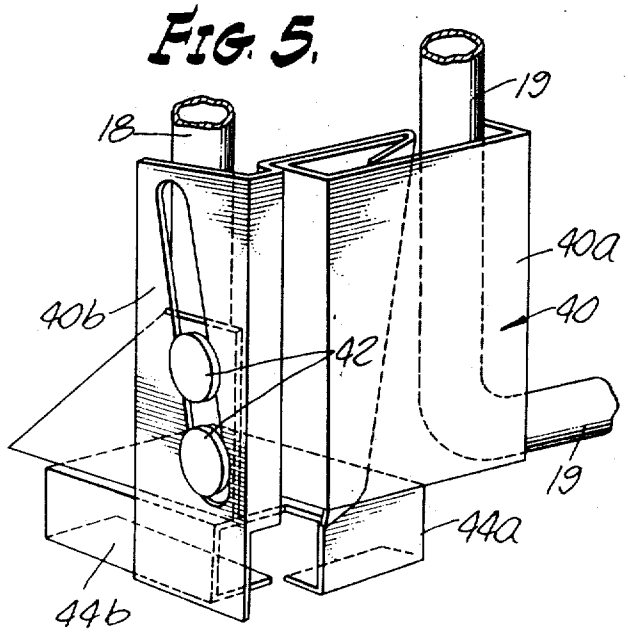


FIG. 5.



PALLET DISTRIBUTION CAGE

BACKGROUND OF THE INVENTION

Pallets are presently in widespread use in warehouses, and in other places, for supporting loads of goods for transportation from one location to another, either within the warehouse or to distant points. One reason for the widespread use of the pallet is that it supports its load up from the floor of the warehouse, so that the forks of a fork lift truck, or the like, may be easily slipped under its load supporting surface in order that the pallet and its load may be conveniently lifted up for movement from one point to another.

In order to widen the field of use of such pallets, it is usual in the prior art to provide walls which may be removably mounted on the pallet to form a bin or container for the goods carried thereby. The present invention is concerned with such a structure, and it provides a cage-like assembly which is composed of individual wall panels removably locked to one another, and which may easily and conveniently be clamped to the peripheral edge of the pallet to provide a rigid and stable container, and yet which may be easily removed from the pallet and which may be easily disassembled.

A feature of the structure of the invention is the provision of a hinged section on one of the walls to permit access to the container. In accordance with the invention, the hinged section is held in a closed position by a unique removable sliding locking strip which is conveniently moved down into receiving brackets, as will be described.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective representation of the cagelike structure of the invention in its assembled condition on a storage pallet;

FIG. **2** is a detailed representation of a locking strip which is used to hold a hinged section of one of the walls of the structure in a closed condition;

FIG. **3** is an enlarged detailed perspective representation of a locking bracket assembly, one of which is associated with each end of the locking strip of FIG. **2**;

FIG. **4** is an enlarged perspective representation of a fixed locking bracket, a plurality of which are used to hold the side panels of the structure in a rigid assembled condition, but yet to permit the side panels easily to be disassociated from one another; and

FIG. **5** is an enlarged perspective detailed representation of a foot bracket assembly, one of which is mounted at each lower corner of the structure, and which serves to hold the structure firmly clamped onto an associated pallet.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

The cage-like structure of the present invention, as shown in FIG. **1** includes a pair of wire-formed side panels **10** and **12** which are supported in spaced parallel relationship when the structure is assembled and in place on a pallet, such as the illustrated pallet **14.** The wire-formed side panels **10** and **12** may be similar in their construction, and each may comprise a peripheral tubular member **18** bent into a closed rectangular shape, as shown. A plurality of wires **20** extend upwardly across the area enclosed by the tubular member **18,** and are welded to the tubular member, and a pair of further tubular members **22** extending across the wires **20** and welded to the tubular member **18** as a reinforcing means.

The structure may also include an end panel **24** and an end panel **26.** The end panel **26,** for example, may include a lower section **26***a* and an upper section **26***b* hinged to one another, so that the upper section **26***b* may be turned down to provide an access to the interior of the structure.

The wire-formed panels described above are intercoupled to one another by means of a plurality of stationary lock assemblies **30.** The stationary lock assemblies **30** may each have the form shown in FIG. **4.** Each stationary lock assembly, for example, includes a first section **30***a* which is welded, or otherwise affixed, to the tubular member **18** of the corresponding side wall, and a second section **30***b* which is welded, or otherwise affixed, to the tubular member **19,** for example, of the adjacent end wall. The two sections **30***a* and **30***b* have the illustrated wedge-shaped configuration, so that one section may slide down into a second section, with the sections tightening with respect to one another as they move down into the position shown in FIG. **4.** In this way, the wire-formed side panels and end panels of the assembly are held rigidly together when the structure is in the assembled condition of FIG. **1.** Yet, the panels may be easily disassociated from one another, merely by moving the end panels up to remove the lock sections **30***b* from their corresponding lock sections **30***a*.

A foot bracket assembly **40** is provided at each of the lower corners of the structure. The foot bracket assembly is shown in more detail in FIG. **5,** and, as illustrated, it includes a first section **40***a* which is affixed, by welding or the like, to the tubular member **19,** and it also includes a second section **40***b*. The sections **40***a* and **40***b* engage one another in a wedge-like sliding relationship, similar to the engagement of the stationary locking brackets **30.** However, in the case of the foot bracket assembly, the section **40***b* is mounted on the tubular member **18** by means, for example, of a pair of studs **42** which extend through an angular slot in the section **40***b*. The relationship is such that as the side panels **10** and **12** are moved down towards the plane of the pallet, the associated flanges **44***a* and **44***b* engage the adjacent edge of the pallet, with the flange **44***b* being drawn inwardly into a firm clamping relationship with the pallet, so that the structure is firmly and rigidly held on the pallet.

A removable locking strip **60** is provided to hold the upper section **26***b* closed. When the upper section **26***b* is to be closed, it is merely turned up to the position illustrated in FIG. **1,** and the sliding strip **60** is moved down into a wireformed pocket **62,** as best shown in FIG. **2.** A locking bracket **64** is formed on each end of the strip **60,** the locking bracket having a similar configuration to the locking brackets described above.

As best shown in FIG. **3,** each locking bracket **64** has a first section **64***a* which is welded, or otherwise affixed to the corresponding end of the locking strip **60.** Each section **64***a* is received in a sliding wedge-like fit with a second section **64***b*, the second section being welded, or otherwise affixed to the adjacent tubular member **18.** The locking strip **60,** therefore, operates as a latch, and is merely dropped down into the pocket **62** with the sections of the locking assemblies **64** mutually engaging one another, as described above.

The invention provides, therefore, an improved, simple and inexpensive wire-formed cage for use in con-

junction with a pallet, to provide a container for goods carried by the pallet. The elements of the cage-like structure are intercoupled to one another by similar locking brackets, as described, and further similar locking brackets are used to clamp the structure to the edge of the pallet. An access door is provided, which is held in a closed condition by a latching strip, and further similar locking assemblies. For security purposes, an appropriate lock can be used to lock the access door of the cage.

It will be appreciated that although a particular embodiment of the invention has been shown and described, modifications may be made. It is intended to cover such modifications in the following claims.

What is claimed is:

1. A cage-like structure adapted to be removably secured to the peripheral edge of a rectangular pallet, such structure including: a pair of side panels spaced and parallel to one another; a pair of end panels spaced and parallel to one another; and a plurality of locking brackets secured to respective ones of said panels at the adjacent edges thereof, each of said brackets including a first section secured to one of the panels and a second section secured to another of the panels and extending into sliding engagement with said first section, said first section and said second section of each of said locking brackets having a wedge shape to cause the first and second sections of said brackets to tighten with respect to one another as one of the sections is moved down with respect to the other of the sections.

2. The combination defined in claim **1**, and which includes a plurality of foot brackets secured to said panels at the lower corners thereof; each of said foot brackets having a first section and a second section in sliding engagement with one another, said first foot bracket section having a flange for gripping the adjacent edge of the pallet, means affixing said first foot bracket section to one of said panels, and means mounting said second foot bracket section in an angular sliding relationship with the adjacent one of said panels, so that downward movement of such adjacent panel draws said flange into gripping relationship with the adjacent edge of the pallet, said first section and said second section of each of said foot brackets having a wedge shape to cause the foot bracket sections to tighten with respect to one another as one of the foot bracket sections is moved downwardly with respect to the other of the foot bracket sections.

3. The combination defined in claim **1**, in which one of said panels includes an upper section and a lower section hinged to one another, and a removable sliding locking strip extending across said upper section to hold it in a closed and locked position, said sliding locking strip including locking bracket sections at the respective ends thereof, and mating locking bracket sections mounted on the ends of the adjacent panels for receiving the locking bracket sections of said sliding locking strip.

4. A cage-like structure adapted to be removably secured to the peripheral edge of a rectangular pallet, said structure including: a pair of side panels spaced and parallel to one another; a pair of end panels spaced and parallel to one another; and a plurality of foot brackets secured to said panels at the lower corners thereof, each of said foot brackets having a first section and a second section in sliding engagement with respect to one another in a wedge-like relationship, a flange for gripping the adjacent edge of the pallet, and means mounting one of said sections in an angular sliding engagement with a corresponding panel so that downward movement of said panel draws said flange into gripping relationship with the adjacent edge of the pallet.

5. A cage-like structure adapted to be removably secured to the peripheral edge of a rectangular pallet, said structure including: a pair of side panels spaced and parallel to one another; a pair of end panels spaced and parallel to one another; one of said panels including an upper section and a lower section hinged to one another; and a removable sliding locking strip extending across said upper section to hold it in a closed and locked position, said locking strip including a locking bracket section at each end thereof, and mating bracket sections mounted on the end of the adjacent panels for receiving the locking bracket sections on said locking strip, said locking bracket sections on said locking strip and said mating bracket sections on the panels each having a wedge shape so that said mating brackets receive said locking brackets in a sliding wedge-like relationship therewith to cause the bracket sections to tighten with respect to one another as the locking bracket sections move downwardly with respect to the mating bracket sections.

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