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(54) Pallet-holder cradle.

(57) Pallet-holder cradle consisting of: a rectangular base formed of at least two longitudinal members (2), and of a number of cross members (3) perpendicular thereto, on which there is supported a surface (6), and of two pairs of box elements (5) which are disposed at the ends of the surface (6), parallel to the cross members (3), four support legs connected to the base in the vicinity of the corners, there being inserted in these legs a corresponding number of tubes (41) in which the box elements (5) and the surface (6) together delimit a recess for accommodating a pallet (20).

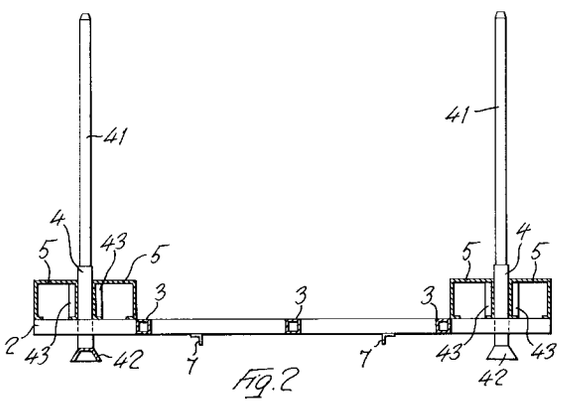

Fig. 2

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The invention relates to loading pallets, commonly known as pallets, for forklift trucks, and in particular to a base for accommodating them, hereafter termed a pallet-holder cradle.

The use of these pallets in stores is known: materials in various types of packaging are loaded onto the pallets with a greater or lesser degree of compactness on the pallets such that during storage of the material, they are maintained disposed in this manner on the pallet, thus permitting quick removal when they have to be moved from the store; this removal will also be carried out by means of the forklift trucks.

However there are disadvantages in this type of system of organizing the material stored. Thus the pallets have standard dimensions (UNI 4121), and this means that whenever goods with dimensions greater than those of the pallet must be disposed on the latter, particularly in the case of very long packages of approximately 2 m, the goods will project from the pallet at both ends. When the material must be stored under this type of condition for some time, it can easily be predicted that a storage situation of this kind will inevitably lead to deterioration of the material stored, with substantially mechanical deformations caused by the precarious situation of storage itself.

In order to remedy this situation larger pallets have been tried, but these involve disadvantages concerning their management in a store, and owing to the fact that they exceed the aforementioned standard dimensions.

The object of the invention is to eliminate this type of disadvantage by means of a storage system which uses ordinary pallets, and which permits storage of goods of dimensions larger than those of the pallets.

This can be achieved by means of a pallet-holder cradle consisting of:
a rectangular base formed of at least two longitudinal members, and of a number of cross members perpendicular thereto, on which there is supported a surface, and of two pairs of box elements, preferably made of metal plate, which are disposed at the ends of the surface, parallel to the cross members, four support legs, which are provided with bell-shaped support feet and are connected to the base in the vicinity of the corners, there being inserted in the legs a corresponding number of tubes for supporting the material to be stored, in which the box elements together with the surface form a recess for accommodating a pallet, the height of the box elements being substantially the same as that of the pallet.

In addition the cradles can be stacked on one another during the storage of the material, by inserting tubes into the bell-shaped feet of a superimposed cradle, thus permitting substantial saving of space in the store. When the cradles have been unloaded, the support tubes can also advantageously be removed from the cradles and restacked on top of each other by inserting the upper end of the support legs of one cradle in the bell-shaped foot of another cradle which is stacked on top of it.

The cradle is also provided on the lower part of its base surface with two pairs of guide elements, which are substantially L-shaped in section, and which enable the forks of the forklift truck to load the cradle without any danger of loss of balance.

Other advantages and further features will become apparent from the following description of an embodiment of the invention produced purely by way of non-limiting example, with reference to the attached drawings, in which:

Figure 1 is a plan view from above of the pallet-holder cradle according to the

Figure 2 is a cross-section along line II-II of the cradle;

Figure 3 is an elevation of the cradle shown with its load;

Figure 4 is a lateral elevation of two stacked cradles with their loads; and

Figure 5 is a cross-section of two empty, stacked cradles.

In Figure 1, 1 designates a pallet-holder cradle according to the invention. The cradle 1 comprises a base consisting of two constant cross-section metal longitudinal members 2, a series of metal cross, members 3, also of constant cross-section on which there are disposed a metal plate 6, and four box elements 5, which are disposed in pairs at the ends of the base, parallel to the cross members 3, which are also made of metal plate, the function of which will be described further hereinafter. In the vicinity of the four corners of the base, and in an intermediate position in relation to each pair of box elements 5, there are disposed four support legs 4 of the cradle 1, which are attached to the base structure by means of the sections 43, which are welded to the legs 4 and to the box elements 5. In addition, on the lower surface of the two longitudinal members 2, there are disposed two pairs of L-shaped elements 7 (see also Figures 2 and 3), the function of which will be described hereinafter.

The cross-section in Figure 2 shows more clearly some features of the cradle 1. The plate 6, which is contained within the two innermost box elements 5, forms therewith a recess for the purpose which will be described hereinafter. The legs 4 have support feet 42 and tubes 41, the purpose of which will be described hereinafter.

The operation and use of the cradle 1 are easily exemplified in Figures 3, 4 and 5. In Figure 3, the cradle 1 accommodates the pallet 20 for a

load of material 10, in the recess between the plate 6 and the box elements 5; by this means the box elements 5, which are the same height h as the pallet 20, permit improved displacement of the weight of the material on the overall surface thus obtained. In addition, the tubes 41 ensure that the material 10 is supported laterally.

When the pallet 20 has been placed in the cradle 1, the cradle can be stacked on another cradle as shown in Figure 4. The rounded ends of the tubes 41 can easily be inserted in the bell-shaped support feet 42. In order to assist this stacking, there are disposed on the lower surface of the longitudinal members 2, the L-shaped elements 7, which enable the forks of the forklift truck to obtain an improved hold when raising the cradle 1 which contains the material 10 and the pallet 20, thus preventing any loss of balance of the cradle. It has been calculated that up to four cradles according to the present model can be stacked. For each of these cradles the maximum load is 800 kg, whereas the average load recommended in use is between 300 and 500 kg. By this means organisation of storage of the material 10 in the store is further assisted.

When the material 10 has been unloaded from the cradles, the cradles can be disposed once more as shown in Figure 5; in this Figure the cradles are shown stacked on one another after the tubes 41 have been removed. By this means these cradles take up very little space in the store, thus assisting the employees who are working there.

By means of the device according to the invention an undoubtedly improved storage system for material of "exceptional" length is obtained, which maintains the integrity of the material and assists the operations of the stores staff; in addition this device permits more appropriate use of the spaces, with the above-described features unchanged, by allowing a plurality of cradles to be stacked. Finally, when the cradles are not being used, they require very little storage space.

Claims

1. Pallet-holder cradle consisting of:
   a rectangular base formed of at least two longitudinal members (2), and of a number of cross members (3) perpendicular thereto, on which there is supported a surface (6), and of two pairs of box elements (5) which are disposed at the ends of the surface (6), parallel to the cross members (3), four support legs (4) which are provided with support feet (42), and are connected to the base in the vicinity of the corners, there being inserted in these legs a corresponding number of tubular uprights (41) in which the box elements (5) and the surface (6) together delimit a recess for accommodating a pallet (20), the height (h) of the box elements (5) being substantially the same as that of the pallet (20).

2. Pallet-holder cradle according to Claim 1, characterized in that the support feet (42) are bell-shaped tubes, and two or more cradles (1) can be stacked on one another during the storage of the material, by inserting the tubes (41) of one cradle in the bell-shaped feet (42) of a second cradle.

3. Pallet-holder cradle according to Claim 1, characterized in that on the lower surface of each longitudinal member (2) there is a pair of L-shaped elements (7) which guide the forks of a forklift truck.

4. Pallet-holder cradle according to Claim 1, characterized in that when the tubes (41) have been removed from the cradles (1), the latter can be stored stacked.

5. Pallet-holder cradle according to Claim 1, characterised in that the surface (6) and the box elements (5) are preferably made of metal plate.

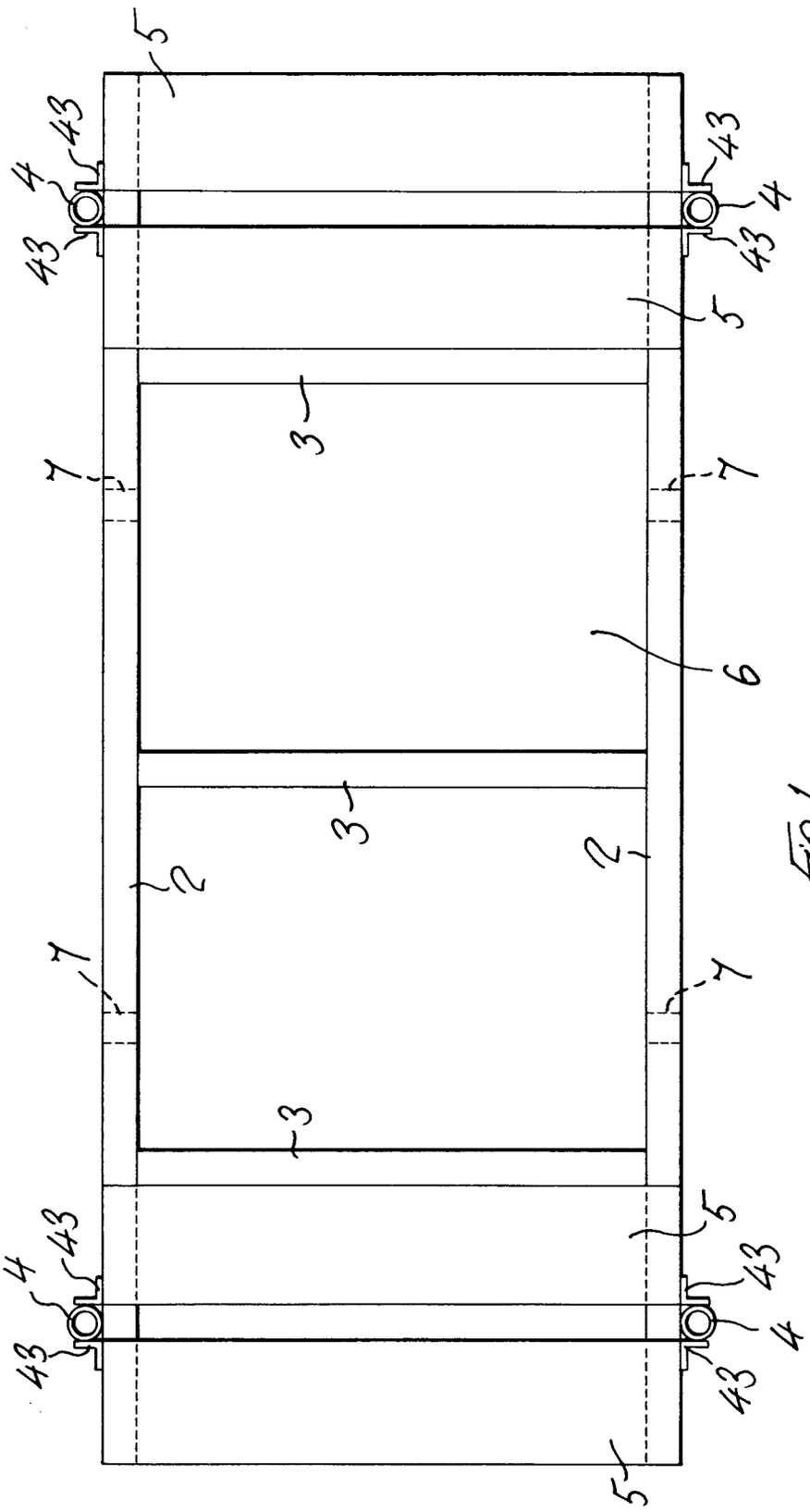

Fig.1

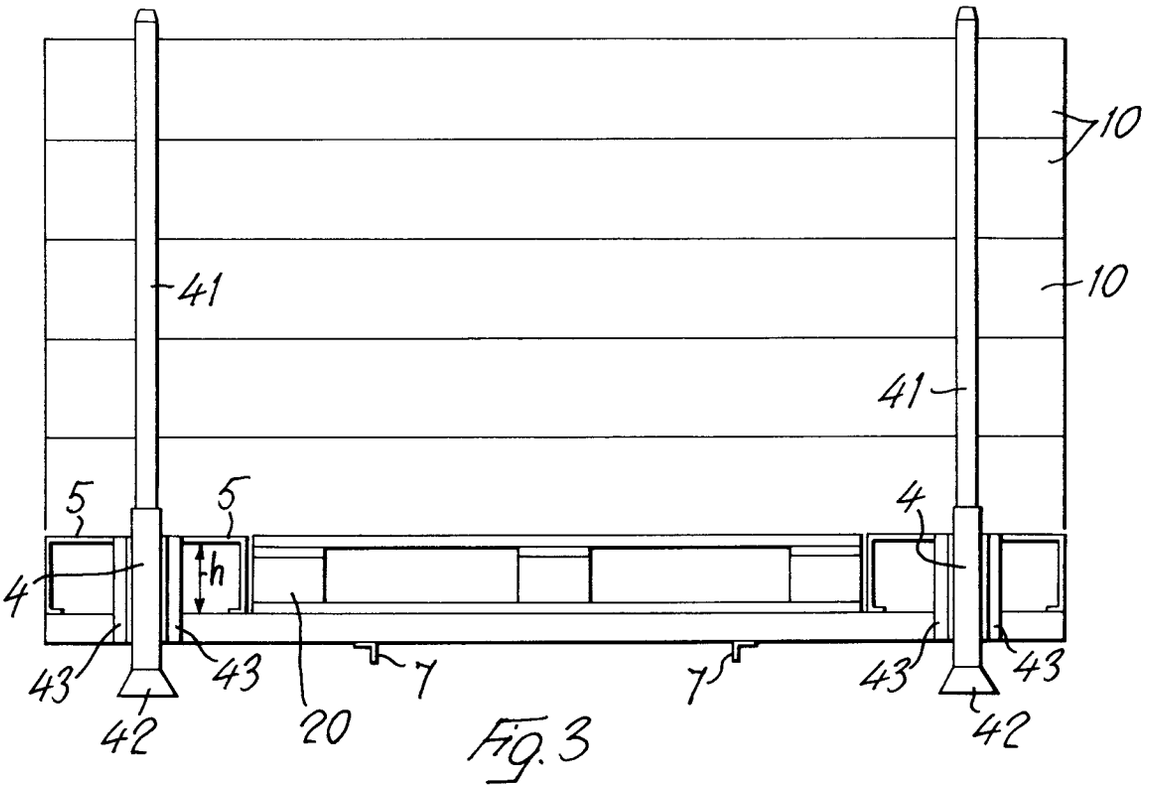
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Fig. 3

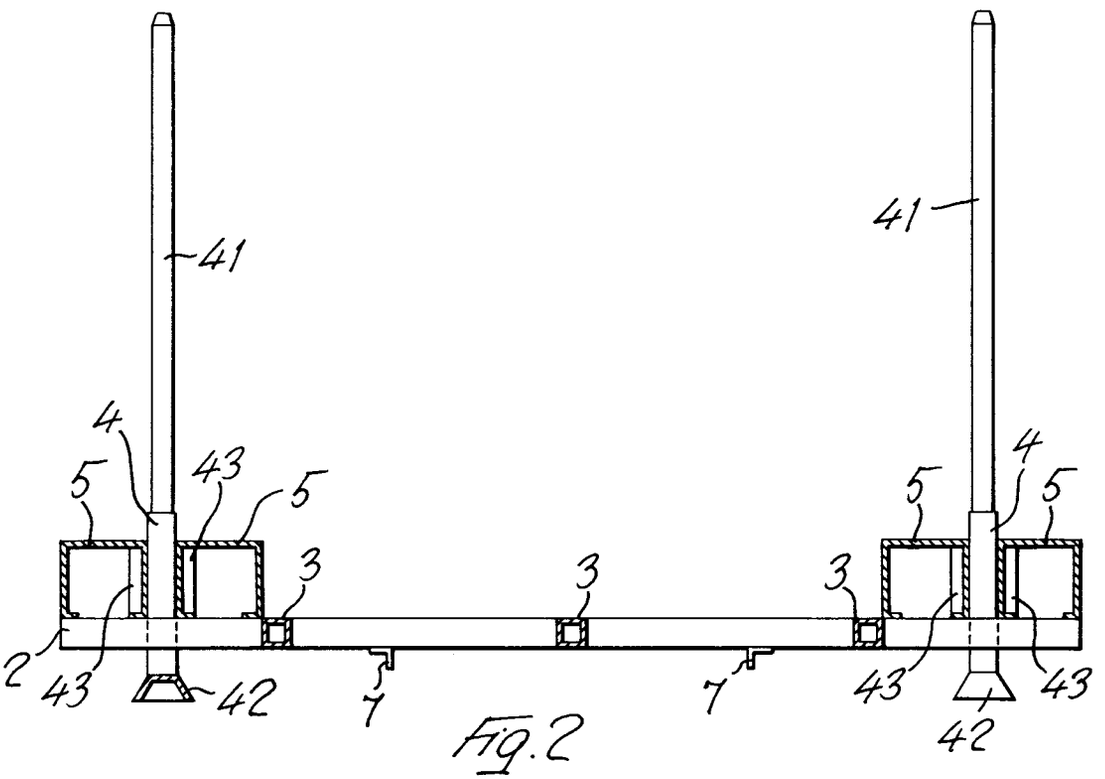
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Fig. 2

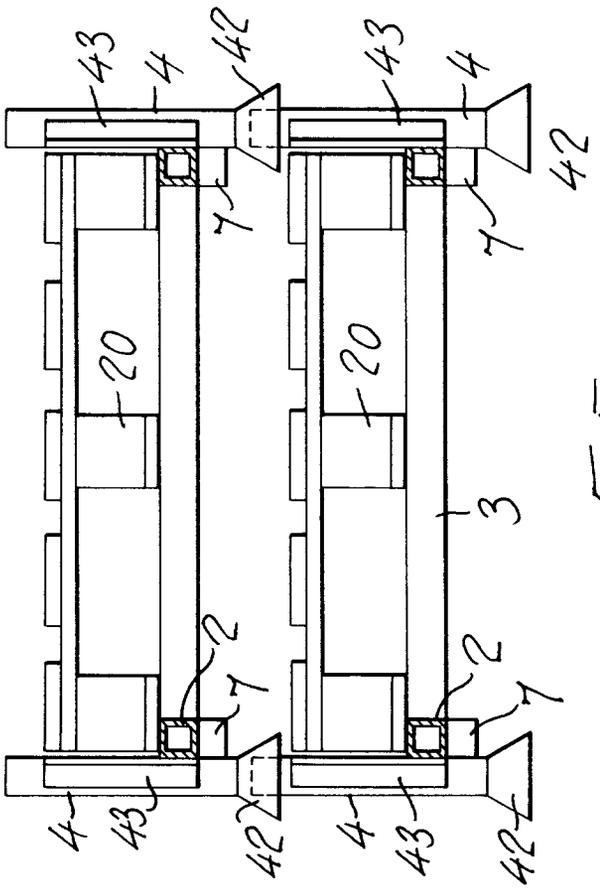

Fig. 5

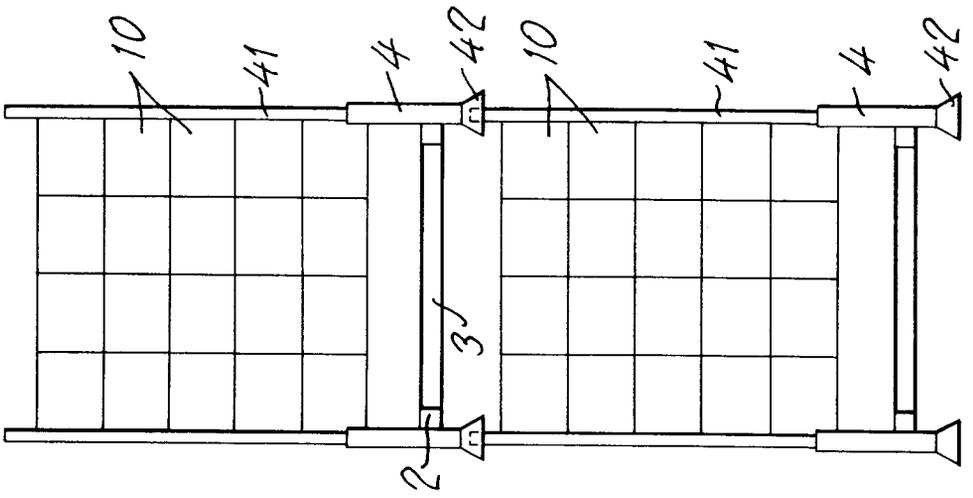

Fig. 4