

A METHOD OF TRANSPORTING UNIT LOADS

Technical Field

5 The present invention relates to a method of transporting unit loads on an area having a certain length and width, the area for example being the bottom of a standardized container or a loading compartment of a railway goods waggon.

Background of the Invention

10 Conventionally, unit loads are transported on standardized wooden pallets or the like. The standardized sizes are 760 x 1140 mm in Asia and 800 x 1200 mm in Europa, but other sizes can also be found. Especially if
15 the unit load has at least one bottom dimension smaller than the corresponding dimension of the wooden pallet, the pallet will determine the occupied area in the container or the loading compartment. If the unit load, on the other hand, has at least one bottom dimension greater than the
20 corresponding dimension of the pallet, other problems occur.

 The result of these circumstances will be a less favourable utilization of the available area (and volume) of the container or loading compartment, or in other words
25 a low "filling rate". Another drawback is that due to the distances between neighboring unit loads the transported goods is susceptible to damages due to shocks and vibrations during transportation.

The Invention

30 These problems may according to the invention be obviated in that the respective lengths and widths of the unit loads to be transported are adjusted to together correspond to the length and width of the area and that each unit load is placed on two or more loading ledges,
35 each ledge comprising an L-shaped profile having projections for supporting the unit load at a certain

distance over its support and being positioned at a lower edge of the unit load.

The Drawings

The invention will be described in further detail
5 below under reference to the accompanying drawings, in which

Fig 1 is a perspective view of a loading compartment in a goods waggon after conventional transportation of articles stacked on wooden pallets,

10 Fig 2 is a perspective view of an exemplary loading ledge to be used according to the invention, and

Fig 3 is a perspective view of in principle the same loading compartment as is shown in Fig 1 but after transportation of stacked articles according to the
15 invention.

Detailed Description of Embodiments

Fig 1 illustrates a loading compartment of a railway goods waggon, in which articles 1 in the form of cardboard boxes are transported. Articles of different sizes are
20 stacked on conventional wooden pallets 2, having dimensions not necessarily adapted to the size neither of the articles 1 nor the compartment. Fig 1 illustrates the situation as it may look after a completed transportation with shocks and vibrations.

25 In the illustrated case three wooden pallets 2, each with a stack of articles 1, have been placed on top of a stack of longer articles. The length of each individual article in the upper stacks is less than the length of its wooden pallet, which means that the smaller articles will
30 not at all fill the available space, even if the wooden pallets possibly fill a designated area. The result is, as illustrated, that the articles - even if attempts to hold them in position on their wooden pallets by straps are made - can get loose under the influence of the forces exerted
35 during transportation and be damaged or even destroyed.

The result is both apparent risks for severe damages to the transported goods and a bad utilization of the available space. In fact, the so called filling rate in a loading compartment can practically be increased by at least 35%, if the articles are placed as close to each other as possible. A bad volume utilization obviously leads to an inferior transport economy (besides the risks for damages, as mentioned above).

A loading ledge 5 as shown in Fig 2 is a core element in the method according to the invention. It is a preferably injection moulded, L-shaped profile of recyclable plastic, preferably polypropylene (PP). Its lower leg 6 is provided with projections 7, in the shown case three projections, for supporting a unit load above the ground or other support and allowing handling with ordinary handling equipment utilized for goods on ordinary wooden pallets presently widely used in distribution systems. Its upper leg 8 is generally plain and is to bear against a vertical side surface of a unit load to be supported by the loading ledges.

In a practical (but not limiting) case the overall length of the loading ledge 5 may be 760 mm and the widths of the lower leg 6 and the upper leg 8 180 mm and 100 mm, respectively. The projections 7 may have a height of 35 mm and a width of 75 mm. The central projection may have a length of 160 mm, and each of the two outer projections may have a length of 75 mm.

One factor for choosing 760 mm as the length of the loading ledge 5 is that the internal width of a widely used standard 40' container is 2.39 m, which means that three loading ledges 5 fit into this width.

Two or more loading ledges 5 are positioned at the lower edges of unit loads, and their projections 7 will serve to raise the unit load above its support, so that the unit load may be handled by the same type of handling

equipment as is used to handle loads on wooden pallets. The unit load with its loading ledges is normally provided with circumferential straps and/or stretch or shrink wrapping for keeping the unit load safely together. No wooden pallet
5 is needed any more for the handling, transport and storage of the unit load. If the unit load has a considerable length, two or even three loading ledges may be arranged at each of the lower edges thereof.

By the use of the loading ledges 5 instead of
10 conventional wooden pallets, a complete flexibility with regard to the length and width of the unit load to suit requirements with regard to for example the length and width of the area intended for the unit loads is afforded. In this way a loading compartment may obtain a much
15 improved filling rate, leading to a much improved transport economy and much less damages to transported articles, which will not have the possibility to move about under the influence of transport shocks and vibrations.

This is illustrated in Fig 3 showing a loading
20 compartment with a lower strapped unit load 1 with two loading ledges 5 at each lower edge and a length corresponding to the length of the loading compartment and two upper strapped load units 1 each with one loading ledge 5 at each lower edge and with a combined length
25 corresponding to the length of the loading compartment.

In certain cases the size of a package for an article is determined by the size of the article. However, if the article for example is a dismantled piece of furniture, the different members together constituting the piece of
30 furniture may be packed in different ways, which means that the different dimensions of the package can be adapted for example to suit the size of the loading compartment to be used.

CLAIMS

1. A method of transporting unit loads (1) on an area having a certain length and width, the area for example being the bottom of a standardized container or a loading compartment of a railway goods waggon, c h a r a c t e r-
5 i z e d in that the respective lengths and widths of the unit loads (1) to be transported are adjusted to together correspond to the length and width of the area and that each unit load is placed on two or more loading ledges (5),
10 each ledge comprising an L-shaped profile having projections (7) for supporting the unit load at a certain distance over its support and being positioned at a lower edge of the unit load.
2. A method according to claim 1, wherein the unit
15 loads (1) after transportation are stored on their loading ledges (5).