

VERIFICATION OF A TRANSLATION

I, Henry M. Feiereisen, having a place of business at 350 Fifth Avenue, Suite 4714, New York, N.Y. 10118, depose and state that:

1. I am familiar with the English and German languages.
2. I have read the attached German language International Patent Application PCT/EP2006/003325.
3. The hereto attached English language text is an accurate translation thereof.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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HENRY M. FEIEREISEN

Identification Plate for
Pallet Container

The invention relates to an identification plate for a pallet container for storage and transport of liquid or free-flowing materials, including an inner thin-walled plastic container having an upper fill opening and a lower drain valve, a lattice frame disposed in close surrounding relationship to the plastic container and having horizontal and vertical lattice rods which are welded together, and a bottom plate on which the plastic container is supported and on which the lattice frame is mounted. The bottom plate may be constructed as simple wooden pallet, as steel frame pallet, or as plastic pallet.

Various configurations of such pallet containers in lightweight construction with a fill volume of about 1,000 l are generally known, e.g. reference U.S. 6,244,453 (with lattice frame of quadrilateral tubes) and used for transport of liquid or free-flowing materials. The pallet containers may be used for the transport and storage of hazardous liquid materials like chemicals (e.g. solvents, acids etc.), only when passing the inspection tests by an authorized official institution and receiving a registration number. Typically, each pallet container has mounted on the lattice frame on the side of the discharge fitting an identification plate (Label Plate) on which a respective information sheet is glued or placed in an attached transparent pocket for identification of the respective content, content manufacturer, pallet manufacturer, registration number, or similar data. Some manufacturers secure the identification plates through a bolted connection onto two or three horizontal rods of the lattice frame. Such bolted connections by means of four or six bolts are time-consuming and may result in injuries as a consequence of the protruding bolt heads.

An identification plate or lettering plate without bolted connections is disclosed in US 5,787,623. The pallet container described in this reference has lattice rods which are designed as round tubes and drawn in at the intersection points for formation of trough-shaped double-walled depressions which extend in longitudinal direction of the lattice rods so that the lattice rods which are welded together at the intersection points lie approximately in a plane (round tube lattice frame). The lettering plate mounted thereon has a lower support edge which is beveled or flanged outwardly and which abuts a lower horizontal lattice rod and engages behind the latter, whereas the upper edge is designed as a clawed edge and in the mounted state of the lettering plate fits behind an upper horizontal lattice rod thereby resiliently bracing the lettering plate. This is disadvantageous because on one hand the edges which reach behind the horizontal lattice rods can touch the thin-walled inner plastic container, in particular when a filled inner container bulges outwards between two vertical rods and is exposed to shaking during transport, and on the other hand anyone is able to overcome the resilient bracing by hand without any further aids in order to remove and manipulate (e.g. exchange) the sheet metal plate without authorization. According to a modified configuration, the sheet metal plate is provided on the upper side of the outer edges with particular insert sleeves for plastic clamp pins which fit in the mounted state of the plate with their head into the trough-shaped depressions of the upper horizontal lattice rods and thereby fix the plate. A seal of originality may be provided in the form of an additional push button with a web, which spreads like a wedge, and bolts, which are attached by film hinges and must be pressed into a particularly provided depression on the upper edge of the sheet metal plate. This construction is disadvantageous because of the need for additional plastic securing elements which may become brittle through exposure to weather influences and may easily break off when subjected to impacts.

It is an object of the present invention to provide for a pallet container of a type involved here an improved constructive design for an identification plate which can

easily be secured to the lattice frame without additional fastening or securing means.

This object is attained in an especially simple and advantageous manner by the features set forth in claim 1.

In the identification panel according to the invention the upper edge and lower edge are slight beveled (bent) to the rear and abut in the mounted state over the entire length - without any recess for a covered vertical rod - against the outwardly pointing surface of an upper and a lower horizontal rod, while both lateral edges are beveled (bent) to the rear to a comparably greater extent and respectively rolled up at their rear end to form a rolled edge, wherein both lateral bevels have respective recesses in the metal sheet for the upper and lower horizontal rods, and wherein the rolled edge is extended by a piece in rod-like manner upwards and downwards, projects into these recesses, and engages behind the upper and lower horizontal rod. This enables a simple and secure attachment of the identification plate to the lattice frame. It is hereby provided in accordance with a configuration of the invention that the respective distances or a firm abutment under slight prestress of the upper and the lower edge from the upper and lower horizontal rods or the right and left rolled edge from the respective right and left vertical rods are predeterminable by the degree of the bevels or the bevel angle of the upper and/or lower edge or/and both lateral borders of the identification plate, such as to ensure a rattle-free securement with immovable firm seat.

According to a further configuration of the invention, when the identification plate is of suitable size and a further horizontal rod is covered, a respective recess is provided for the covered horizontal rod approximately in midsection of each of both lateral bevels, with the rolled edge being extended downwards by a piece in rod-like manner, projecting from atop into these recesses and engaging behind the covered horizontal rod.

According to a preferred configuration of the invention, a U-shaped section is punched out on each side of the outer front face of the identification plate approximately in midsection directly below the covered horizontal rod and provided at the top with an appended tab (tongue) which in mounted state is bent to the rear and from below against the covered horizontal rod to form a seal of originality.

The invention will now be explained and described in more detail by way of an exemplary embodiment which is shown schematically in the drawings. It is shown in:

Figure 1 a frontal view of a pallet container with identification plate according to the invention,

Figure 2 a frontal view of an attached identification plate according to the invention,

Figure 3 a plan view of the attached identification plate according to the invention,

Figure 4 mounting step 1 of the identification plate according to the invention,

Figure 5 mounting step 2 of the identification plate according to the invention,

Figure 6 mounting step 3 of the identification plate according to the invention, and

Figure 7 clamping of the identification plate according to the invention.

Figure 1 shows a frontal view of a pallet container 10 for storage and transport of liquid or free-flowing materials, including an inner thin-walled plastic container 12

having an upper fill opening and a lower drain valve, a lattice frame 14 disposed in close surrounding relationship to the plastic container 12 and having horizontal lattice rods 20 and vertical lattice rods 22 which are welded together, and a bottom plate 16 on which the plastic container 12 is supported and on which the lattice frame 14 is mounted. The horizontal and vertical lattice rods 20, 22 have an advantageous square profile (compare Fig. 7), as described in the reference US 6,244,453 B1. In this tube profile, the outwardly and inwardly directed side surfaces of the jointly welded horizontal and vertical lattice rods have on both edges a raised rim and a lower center area such that a defined four-point support is formed at the intersections points of the tubular rods for ensuring optimum welding (projection welding) of the lattice tubes. The tubular rods do not extend in a plane but in two tube planes on top of one another so that the resultant lattice frame - compared to a conventional lattice frame with dented round tubes extending approximately in a same plane - have enhanced buckling strength.

Secured above the discharge fitting to the outside of the lattice frame 14 by way of a snap-locking connection (snap fit) is an identification plate 18 according to the invention. As shown by the exemplary embodiment of Figure 2, the identification plate 18 has a rectangular broadside of a width of about 550 mm and a height of about 385 mm, and is made from a very thin galvanized steel sheet of a thickness of only 0.6 mm. The upper edge 24 and lower edge 26 of the identification plate 18 rest externally upon an upper and a lower horizontal lattice rod 20. Since the edgings of the upper and lower edge 24, 26 are slightly beveled to the rear by about 30° over a width of 8 mm and terminate in the lower center area of the square horizontal rod 20, there is no possibility to grab the edge 24, 26 with the fingers (no risk of injury).

The lateral edges of the identification plate 18 are beveled to the rear by about 75° as bevels 28 in the form of broad strips of about 25 mm, i.e. bent to a comparably greater degree, and are rolled up on their rearward end to the outside to form a rolled

edge 30. Both rolled edges 30 have hereby only a small diameter of merely about 5 mm.

Figure 3 clearly shows by way of a plan view the securement of the identification plate 18 to the horizontal rods 20 and depicts the positioning of each rolled edge 30 behind a horizontal rod 20 and at the same time abutting from outside upon a vertical rod 22. Figures 4, 5, and 6 show the various mounting steps of the identification plate 18 according to the invention onto the lattice frame 14. In Figure 4, the upper edge 24 of the identification plate 18 is placed from outside against an upper horizontal rod 20 so that the rolled edge 30 projecting into the upper recess 32 engages from bottom to top behind the upper horizontal rod 20. Then - as shown in Figure 5 - the lower part of the identification plate 18 is swung inwards so that the rolled edge 30 projecting from top to bottom into the central recess 34 reaches behind the center horizontal rod 20. Finally, the identification plate 18 is fully swung inwards in Figure 6 until the lower edge 26 strikes against the outwardly directed surface of the lower horizontal rod 20 so that the rolled edge 30 projecting from top to bottom into the lower recess 32 reaches behind the lower horizontal rod 20. The sheet metal plate 18 is finally secured by shifting the latter by about 6 mm downwards so that the rolled edge 30 in the central recess 34 engages from top to bottom behind the center horizontal rod 20, and the rolled edge 30 in the lower recess 32 engages from top to bottom behind the lower horizontal rod 20, wherein the upwardly pointing rolled edge 30 in the upper recess 32 is designed long enough to still engage the upper horizontal rod 20 by about 5 mm from bottom to top.

Figure 7 shows the identification plate 18 in its final position. As clearly shown in the detailed view A, the two dimples 38 arranged respectively on the outside in the middle of the identification plate 18 reach behind the upper raised edge of the center horizontal rod 20 so that the plate is firmly seated immovably. Finally, both tabs 36 are bent from below against the center horizontal rod 20 to form a seal of originality,

and the sheet metal plate can be detached from the lattice frame only by means of a respective tool. According to a slightly different variation that is provided for exposure to great stress, the U-shaped sections are rotated by 90° so that the tabs 36 are articulated on the side. The immovable securement of the identification plate 18 is realized by bending these vertically aligned tabs to the rear flatly against a vertical rod 22 and vertically directly below a horizontal rod 20. This seal of originality can be bent back only when the pallet container is reconditioned, i.e. when the inner plastic container is removed, in the event the identification plate should be detached and exchanged. At slightest tolerance values (no rattling), the vertical tab 36 has a greater section modulus in axial direction in relation to the horizontal rod lying above, and an inadvertent bending back is impossible.

The front surface of the identification plate 18 is provided with a wraparound bead-like structure which is breached only in midsection across the covered horizontal rod 20. This wraparound structure also protects the stick-on data sheets against wear, when identical pallet containers are stacked in close side-by-side relationship for transport and exposed to shaking during transport. The identification plate is thus secured substantially to only the three covered horizontal rods (abutting from outside thereagainst, with the extended rods of the rolled edge engaging behind), wherein the vertical rods are still further arranged between the horizontal rods and the thin-walled inner plastic container so that parts of the identification plate are absolutely prevented from touching the inner container.

Each pallet container is typically equipped with two such identification plates; such a sheet metal plate is disposed on the lattice frame on the front side of the pallet container above the discharge fitting, and the second sheet metal plate is secured in corresponding fashion on the lattice frame on the backside of the lattice frame.

Identification plates may be dented or damaged during handling, transport or transfer of filled pallet containers. When repeatedly using such pallet containers, reconditioning is required. Damaged identification plate can be easily replaced hereby by a new identification plate so long the inner container is removed from the lattice frame and the sheet metal tongues (tabs) bent inwards as seal of originality have again been straightened out from the inside of the lattice frame.

List of Reference Numerals

- 10 pallet container
- 12 plastic container
- 14 lattice frame
- 16 bottom pallet
- 18 identification plate
- 20 horizontal lattice rod
- 22. vertical lattice rod
- 24 upper edge (18)
- 26. lower edge (18)
- 28 bevel (18)
- 30 rolled edge (28)
- 32. recess (28)
- 34 recess for (20)
- 36 tab (18)
- 38 dimple (18)
- 40 structure (18)

Claims

- 1.) Identification plate () for a pallet container (10) for storage and transport of liquid or free-flowing materials, including an inner thin-walled plastic container (12) having an upper fill opening and a lower drain valve, a lattice frame (14) disposed in close surrounding relationship to the plastic container (12) and having horizontal and vertical lattice rods (22, 24) which are welded together, and a bottom plate (16) on which the plastic container (12) is supported and on which the lattice frame (14) is mounted, wherein the identification plate (18) is characterized in that

the upper edge (24) and lower edge (26) are slightly beveled (bent) to the rear and abut in the mounted state of the identification plate (18) and abut over the entire length - without any recess for a covered vertical rod (22) - against the outwardly pointing surface of an upper and a lower horizontal rod (20), while both lateral edges as bevels (28) are beveled (bent) to the rear to a comparably greater degree and respectively rolled up at their rear end to form a rolled edge (30), wherein the bevels (28) have respective recesses (32) for the upper and lower horizontal rods (20), and wherein the rolled edge (30) is extended in a rod-like manner by a piece, projects into these recesses (32), and engages behind the upper and lower horizontal rod (20).

2. Identification plate according to claim 1,
characterized in that

the respective distances of the edges from the upper and lower horizontal rod (20) or the right and left rolled edge (30) from the respective right and left vertical rods (22) are predeterminable by the degree of the bevels (28) or the bevel angle of the upper and/or lower edges (24, 26) or/and both lateral edges () of the identification plate (), such as to ensure a rattle-free securement.

3. Identification plate according to claim 1 or 2,
characterized in that
at a suitable size of the identification plate (18) and a coverage of a further horizontal rod (20), a respective further recess (34) is provided for the covered horizontal rod (20) approximately in midsection of both lateral bevels (28), with the rolled edge (30) being extended by a piece in rod-like manner, projecting into these recesses (34), and engaging behind the covered horizontal rod (20).
4. Identification plate according to claim 1, 2 or 3,
characterized in that
at least one U-shaped section is punched in the outer front face of the identification plate (18) directly below the covered horizontal rod (20) and provided with an tab (tongue) (36) appended on one side and bent to the rear and either horizontally flat or/and vertically on one end surface from below against a covered horizontal rod (20) to form a seal of originality.
5. Identification plate according to claim 1, 2, 3 or 4,
characterized in that
a rib-shaped dimple (38) is stamped on each outer side of the front face of the identification plate (18) immediately above the covered horizontal rod (20) for abutment in the mounted state against the outwardly pointing surface of a covered horizontal rod (20).

6. Identification plate according to claim 1, 2, 3, 4 or 5,

characterized in that

a wraparound bead-shaped structure (40) is provided in the outer area of the front face of the identification plate (18) and breached only in midsection across the covered horizontal rod (20).