

Pallet-like base for transport and storage containers for liquid

The invention concerns a pallet-like base for transport and storage containers for liquid with an inner container made from plastic and an outside jacket from metal lattice or sheet metal, that is equipped to be handled by forklifts, shelf-storage equipment or similar transporting means and has a metal bottom, resting on metal supporting feet, a central runner and two outside runners, to support the inner container fitted with a closable filling socket and a discharge socket for the connection of a draining fitting.

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When transporting bases of this type together with containers filled with liquid standing on them on a roller conveyor, due to the use of metal runners their slipping is not prevented, as it would be required for safe transporting.

15 A further disadvantage of bases of the known transport and storage container for liquids, fitted with metal runners, is that during the transport of the container on roller conveyors electric sparks may be discharged due to the friction between the metal transport rollers and the metal runners of the bases, representing a danger of combustion of flammable goods with which the transport and storage container may be filled as well as of potentially explosive mixtures of gases and vapours in enclosed spaces.

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The discussion of the background to the invention herein is included to explain the context of the invention. This is not to be taken as an admission that any of the material referred to was published, known or part of the common general knowledge in Australia as at the priority date of any of the claims.

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The present invention is directed towards improving the transport safety of the generic type base for transport and storage containers for liquids on conveying equipment, like roller conveyors.

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According to the invention this improvement may be achieved by a pallet-like base for containers for liquids having the features of patent claim 1.

Accordingly, the present invention provides a pallet-like base for transport and storage containers for liquid with an inner container made from plastics and an outside jacket from metal lattice or sheet metal, that is equipped to be handled by forklifts, shelf-storage equipment or similar transporting means and has a
5 metal bottom, resting on metal supporting feet, a central runner and two outside runners, to support the inner container fitted with a closable filling socket and a discharge socket for the connection of a draining fitting, wherein the central runner and both outside runners are constructed as timber runners.

10 The sub-claims contain advantageous and useful developments of the invention.

By fitting, according to the invention, the pallet-like base for containers for liquids with timber runners, that have considerably greater coefficients of friction
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metal runners of the known container for liquids, the slipping of the containers for liquids fitted with the base will be better prevented on roller conveyors and the danger of spark discharge caused by triboelectricity during the transporting of the container on roller conveyors will be prevented. Furthermore, the wear of the roller conveyors is considerably smaller when using timber runners for the base of the container for liquids than is the case with containers for liquid having metal runners. Finally, when using containers for liquids with bases having timber runners as multiple-use containers, damaged timber runners can be replaced and the timber can be recycled or used for the production of heat energy.

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The invention is explained in the following, based on figures of the drawing, illustrating the following in:

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Fig.1 - a perspective illustration of a transport and storage container for liquids with a pallet-like base,

Fig.2 - an exploded view of the base, and

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Figs.3a to 3d - various types of joining of the timber runners with the metal support feet of the base, schematically illustrated on an enlarged scale.

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The transport and storage container 1 for liquids, used as a single- and multiple-use container, has, as its main components, a replaceable parallelepiped-shaped inner container 2 from plastics, fitted in the top lid 5 with a filler socket 3 that can be enclosed with a cover 4 and a discharge socket 6 in the region of the bottom lid 7 to connect a draining and flushing valve 8, an outer jacket 9 from intersecting horizontal and vertical metal grate rods 10, 11, as well as a pallet-like base 12 having longitudinal and lateral dimensions in accordance with European standards, the sheet metal bottom 13 of which, constructed as a bottom tub, supports the plastic inner container 2.

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The tub-like bottom 13 of the base 12, equipped to be handled by forklifts, shelf-storage equipment or similar transporting means, rests on sheet metal support

feet 14, comprising four corner feet 14a-14d, a rear central foot 14e, a front central foot 14f that is formed from the bottom 13 and is provided below the discharge/flushing valve 8 of the transport container 1, as well as two lateral central feet 14g, 14h formed by the external ends of a bridge-like sheet metal reinforcement 15 for the bottom 13.

The support feet 14 of the base 2 are fastened on a central runner 16 and two outside runners 17, 18, constructed as timber runners 19 and produced from flat boards.

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Figs.3a-3d show four different types of joinings of the timber runners 19 with the sheet metal support feet 14 of the bottom 13 of the base 12.

According to Fig.3a the timber runners 19 are screwed together with the support feet 14 by means of self-tapping sheet metal screws 20, that are pushed through bores 21 in the timber runners 19 and screwed into the tulip-like flutes 22 of the support feet 14, while the heads 23 of the screws are accommodated in recesses 24 in the underside 25 of the timber runners 19.

Fig.3b shows a joining of the timber runner 19 with the support feet 14 by means of hollow rivets 26, that pass through congruent bores 27, 28 in the timber runner 19 and the upright legs 29 of the support feet 14, and the ends 26a, 26b of which are bent over against the underside 25 of a timber runner 19 and the upright leg 29 of a support foot 14.

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In the case of the joining of the timber runner 19 with the support feet 14 by means of hollow rivets 26, illustrated in Fig.3c, the hollow rivets are pushed through bores 27 in the timber runner 19. Following this one end 26b of the hollow rivet 26 is welded with the upright leg 29 of a support foot 14 and afterwards the other end 26a of the hollow rivet 26 is bent against a timber runner 19. The welding of the hollow rivet 26 with the upright legs 14 can be carried out by friction welding, laser welding or resistance welding.

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The joining illustrated in Fig.3d uses nails 30, that are driven into the timber runner 19 and the tips 31 of which, abutting against the upright legs 29 of the support feet 14 are welded with the upright legs of the support feet.

- 5 In addition to the support foot 14 in the edge region, the bottom 13 of the base 12 of the transport container 1 is supported by an additional central support 32 in the central region, while the central support 32, made from timber, plastics or metal, is screwed together with the bottom 13 and the central runner 16 of the base 12.
- 10 The central support 32 prevents a sagging of the bridge-like sheet metal reinforcement 15 of the bottom 13 of the base 12 under the weight of a filled container due to the reduced stability of the base brought about by the timber base construction when compared with a base constructed exclusively from metal parts, so that the bottom clearance of the bridge-like sheet metal reinforcement of
15 the bottom of the base for the forks of a transport equipment will be ensured.

Patent claims

The claims defining the invention are as follows:

- 5 1. A pallet-like base for transport and storage containers for liquid with an inner container made from plastics and an outside jacket from metal lattice or sheet metal, that is equipped to be handled by forklifts, shelf-storage equipment or similar transporting means and has a metal bottom, resting on metal supporting feet, a central runner and two outside runners, to support the inner
10 container fitted with a closable filling socket and a discharge socket for the connection of a draining fitting, wherein the central runner and both outside runners are constructed as timber runners.
2. A base according to claim 1, wherein the central runner and the outer
15 runners of the base are produced from flat boards.
3. A base according to claim 1 and 2, including a joining of the timber runners with the support feet by means of self-tapping sheet metal screws, that are pushed through bores in the timber runners and screwed into the tulip-like
20 flutes of the support feet.
4. A base according to claim 1 and 2, including a joining of the timber runners with the support feet by means of hollow rivets, that pass through congruent bores in the timber runners and the support feet, and the ends of
25 which are bent over against the respective timber runner and a support foot.
5. A base according to claim 1 and 2, including a joining of the timber runner with the support feet by means of hollow rivets, that pass through the bores in the timber runners, while one end of the hollow rivet is welded with the
30 respective support foot and the other end is bent against the respective timber runner.

6. A base according to claim 1 and 2, including a joining of the timber runner with the support feet by means of nails, that are driven into the timber runner and the tips of which, abutting against the support feet, are welded with the support feet.
7. A base according to any one of claims 1 to 6, further including a central
5 support to support the bottom on the central runner.
8. A base according to claim 7, wherein the central support is screwed together with the bottom and the central runner.
- 10 9. A base according to claim 7 and 8, wherein the central support is made from timber, plastics or metal.
- 15 10. A pallet-like base for transport and storage containers for liquid with an inner container made from plastics and an outside jacket from metal lattice or sheet metal, that is equipped to be handled by forklifts, shelf-storage equipment or similar transporting means and has a metal bottom, resting on metal supporting feet, a central runner and two outside runners, to support the inner container fitted with a closable filling socket and a discharge socket for the connection of a draining fitting, wherein the central runner and both outside
20 runners are constructed as timber runners, substantially as herein described with reference to any one of the accompanying drawings.