Patent claims

1.) A pallet container ~~(10)~~ for storage and for transportation of liquid or free-flowing contents, having a thin-walled, rigid plastic inner container ~~(12)~~ composed of thermoplastic material, having a tubular lattice frame ~~(14)~~, which, in the form of a supporting jacket, tightly encloses the plastic inner container ~~(12)~~ and which is composed of horizontal and vertical tubular bars ~~(18, 20)~~ which are welded to one another, and having a rectangular bottom pallet ~~(16)~~, on which the plastic inner container ~~(12)~~ bears and to which the tubular lattice frame ~~(14)~~ is firmly connected, wherein the cubic plastic inner container ~~(12)~~ has an upper filler neck, which can be closed off by means of a screw cover ~~(26)~~, and has a bottom-side ~~extraction connector, with an~~ extraction fitting ~~(24)~~, characterized in that

- the extraction fitting includes an extraction fitting housing with an external thread which can be closed off by a screw cap with a corresponding internal thread, and wherein a flexible inliner ~~(28)~~ composed of plastic film is inserted into the rigid plastic inner container ~~(12)~~ and, at the bottom, is connected in a gas- and liquid-tight manner to ~~the extraction connector, and/or to~~ the extraction fitting ~~(24)~~, of the rigid plastic inner container ~~(12)~~ via an inliner connector ~~(30)~~,

~~characterized in that~~

- the inliner connector ~~(30)~~ of the inliner ~~(28)~~ is, via a cylindrical welding region, welded directly ~~connected in a materially bonded manner~~ to ~~the~~ a cylindrical tube connector ~~(34)~~, facing toward the inner side of the plastic inner container ~~(12)~~, ~~of the extraction fitting housing (32)~~ of the extraction fitting ~~(24)~~,
- a drainage tube is firmly inserted into the cylindrical tube connector of the extraction fitting housing of the extraction fitting and projects through the inliner connector into the inliner, and
- the inliner is rolled up from both sides to the center to form a bar-like film roll and is covered by a tubular packing cover.

~~2.) The pallet container as claimed in claim 1,~~

~~characterized in that~~

~~the inliner connector (30) is, via a cylindrical welding region (44), directly connected in a materially bonded manner radially from the inside to the inner surface of the cylindrical tube connector (34) of the extraction fitting housing (32).~~

~~3.) The pallet container as claimed in claim 1 or 2,~~
~~characterized in that~~
~~the inliner connector (30) of the inliner (28) is welded directly onto the cylindrical tube connector (34), facing toward the inner side of the plastic inner container (12), of the fitting housing (32) of the extraction fitting (24).~~

4~~2~~.) The pallet container as claimed in claim 1~~, 2 or 3~~,
characterized in that
the inliner connector ~~(30)~~ is, by means of a pin-like welding device introduced from the outer side of the extraction fitting ~~(24)~~ into the extraction fitting housing ~~(32)~~, welded onto the inner surface of the cylindrical tube connector ~~(34)~~ of the extraction fitting housing ~~(32)~~.

5~~3~~.) The pallet container as claimed in claim 1~~, 2 or 3~~,
characterized in that
the inliner connector ~~(30)~~ is, by means of a pin-like welding device introduced from the inner side of the inliner into the extraction fitting housing ~~(32)~~, welded onto the inner surface of the cylindrical tube connector ~~(34)~~ of the extraction fitting housing ~~(32)~~.

~~6.) The pallet container as claimed in one of the preceding claims 1 to 5,~~
~~characterized in that~~
~~a drainage tube (46) is firmly inserted into the cylindrical tube connector (34) of the extraction fitting housing (32) of the extraction fitting (24) and projects some way through the welded-in inliner connector (30) into the inliner (28).~~

7~~4~~.) The pallet container as claimed in claim 6~~1~~,
characterized in that
the extraction fitting ~~(24)~~ is in the form of a 3-inch extraction fitting, and, for the insertion of the drainage tube ~~(46)~~, a base disk ~~(48)~~ is inserted into the cylindrical tube connector ~~(34)~~ of the extraction fitting housing ~~(32)~~ of the extraction fitting ~~(24)~~.

8~~5~~.) The pallet container as claimed in claim ~~6 or 7~~4,
characterized in that
the drainage tube ~~(46)~~ and the base disk ~~(48)~~ are produced as a one-part component in an injection-molding process.

~~9~~6.) The pallet container ~~one of the preceding~~ as claimed in claims ~~6 to 8~~4 or 5, characterized in that
the base disk ~~(48)~~ is fixed in a rotationally fixed manner in the extraction fitting ~~(24)~~ by means of a metallic grounding screw ~~(52)~~ screwed in through the cylindrical tube connector ~~(34)~~ of the extraction fitting housing ~~(32)~~.

~~10~~7.) The pallet container as claimed in one of the preceding claims 1 to ~~9~~6, characterized in that
the inliner ~~(28), which is welded directly onto the extraction fitting (24),~~ is in the form of a simple rectangle-shaped pillow liner~~, and those corners of the inliner film which face toward the extraction fitting (24) folded in to the center, and is rolled up from both sides to the center to form a bar-like film roll and is covered by a tubular packing cover (56)~~.

~~11~~8.) The pallet container as claimed in one of the preceding claims 1 to ~~10~~7, characterized in that
the tubular packing cover ~~(56)~~ consists of a thin plastic film and is provided with a separating line which extends in a longitudinal direction and which can be easily torn open.

~~12~~9.) The pallet container as claimed in one of the preceding claims 1 to ~~11~~8, characterized in that
the extraction fitting ~~(24) with welded-on inliner (28), with drainage tube (46), inserted therein, with base disk (48), and with packing cover (56) pulled thereover~~ is formed as an easily exchangeable module unit ~~(58)~~ which unfolds automatically during filling.

~~13~~10.) The pallet container as claimed in one of the preceding claims 1 to ~~12~~9, characterized in that
- the ~~bottom-side,~~ flexible inliner connector ~~(30)~~ is produced as a tubular film with a ~~small~~ first diameter~~, and~~
- the flexible inliner ~~(28)~~ is produced as a tubular film with a ~~large~~ second diameter larger than the first diameter, and
- the flexible inliner connector is produced from the same multi-layer composite film material with ~~the~~ same barrier properties as the flexible inliner.

~~14~~11.) The pallet container as claimed in one of the preceding claims 1 to ~~13~~10, characterized in that
arranged in the screw cover ~~(26)~~ at the closeable container opening in the top of the plastic inner container ~~(12)~~ is a ~~relatively small~~ bung opening which can be closed off by means of a 2-inch or ¾-inch bung plug and which serves for connection of a compressed-air pump.

~~15.) The pallet container as claimed in one of the preceding claims 1 to 14, characterized in that~~
~~the flexible inliner connector (30) of the inliner (28) - for one embodiment in which the lower extraction connector of the rigid plastic inner container is provided with a weld flange instead of an external thread, and the extraction fitting is provided on the container side with a corresponding weld flange instead of a screw thread - is welded from the outside via a cylindrical welding region onto the outer surface of the cylindrical tube connector (34) of the extraction fitting housing (32) by means of a matched annular welding device, wherein only after insertion of the inliner into the plastic inner container is the extraction fitting, provided with the inliner, welded by way of its weld flange onto the corresponding weld flange on the lower rigid extraction connector of the plastic inner container.~~

~~16.) A method for producing a module unit consisting of an extraction fitting with welded-on inliner, with drainage tube, inserted therein, with base disk, and with packing cover pulled thereover, which module unit serves for being inserted into a pallet container as claimed in at least one of the preceding claims 1 to 15,~~
~~characterized by the following method steps:~~

- ~~introducing the inliner connector into that part of the cylindrical tube connector of the extraction fitting housing of the extraction fitting which faces toward the plastic inner container,~~
- ~~introducing a pin-like welding device into the inliner connector from the inner side of the inliner,~~
- ~~welding the inliner connector radially from the inside to the inner surface of the cylindrical tube connector of the extraction fitting housing by means of the pin-like welding device,~~
- ~~removing the pin-like welding device and welding shut the still open bottom seam in the inliner,~~
- ~~folding and rolling up the inliner to form a bar-like film roll, and~~
- ~~pulling a tubular, thin-walled packing cover over the rolled-up inliner.~~

17.) A method for producing a module unit consisting of an extraction fitting with welded-on inliner, with drainage tube, inserted therein, with base disk, and with packing cover pulled thereover, which module unit serves for being inserted into a pallet container as claimed in at least one of the preceding claims 1 to 15,
characterized by the following method steps:

- introducing the inliner connector – with rotary flap removed – through the extraction fitting housing and externally turning the inliner connector inside out over the outer extraction fitting housing of the extraction fitting,
- introducing a pin-like welding device from the outside through the extraction fitting housing and the inliner connector,
- welding the inliner connector radially from the inside to the inner surface of the cylindrical tube connector of the extraction fitting housing by means of the pin-like welding device,
- removing the pin-like welding device and trimming away the excess length of the inliner connector,
- folding and rolling up the inliner to form a bar-like film roll, and
- pulling a tubular, thin-walled packing cover over the rolled-up inliner.