GOODS SUPPORT FOR A LOADING FOOT OR THE LIKE

Ere Åke Sjöblom, Orebro, Sweden, assignor to Aktiebolaget Grythyttans Stalnobler, Grythyttan, Sweden, a corporation of Sweden

Filed Oct. 20, 1958, Ser. No. 768,125

Claims priority, application Sweden, Oct. 28, 1957

4 Claims. (Cl. 226—4)

The present invention refers to a vertical supporting section adapted to be removably secured to one edge of a storage pallet or the like load supporting surface of which is elevated from the substructure by means of webbings arranged at least at the pallet corners. The goods lateral supporting sections includes two gripping members adapted to keep the section in a fixed vertical position at the load pallet edge, each gripping member being formed with three bearing surfaces at right angles to one another. An object of the invention is to provide a vertical goods supporting section which is easily secured to and removed from load pallets, and the like. Another object of the invention is to provide a lateral supporting frame adapted to be removably secured to a load pallet and including at least two of said vertical sections.

In transport undertakings it is now more and more common to convey goods on a load pallet consisting of a supporting surface which is elevated by means of foot supports from the substructure on which the load pallet rests, so that the clevis of a clevis truck may be readily introduced underneath the load pallet to raise and remove the same. In order to be able to utilize such a load pallet to the whole of its capacity, it is desirable to provide lateral supporting sections on the load pallet which prevent the goods from being displaced off the pallet during transport. To this end it has been customary practice to fit the load pallets with vertical goods supporting sections on their opposite sides at least. Such sections have either been permanently secured to the load pallets or the load pallets have been provided with special fittings in which the sections have been removably secured. This involves, however, a complication of the load pallet and a high cost of the same.

The invention avoids the drawbacks connected with the goods supports for load pallets as hitherto used, and is substantially distinguished by the provision of a vertical goods supporting section adapted to be removably secured to one edge of the pallet, said section having gripping members on the sides extending at right angles to said one edge side of the load pallet, which gripping members are provided with projections adapted to extend inwardly of the pallet in the space between the lower side of the load supporting surface and the inner vertical surface of the webbing, substantially parallel to said one edge side of the load pallet for removal of the vertical section from the pallet, the gripping members are adapted to be displaced oppositely apart substantially in a direction parallel to said one edge side of the load pallet. Means are also provided for locking the gripping members against displacement when the vertical section is mounted on the pallet edge.

A preferred form of embodiment of the invention will be described hereinafter with reference to the accompanying drawings, in which Fig. 1 is a perspective view of a load pallet provided with a goods lateral supporting frame including two vertical end sections according to the invention, and wherein Fig. 2 shows a gripping member for the goods supporting section viewed from the gable of a load pallet, and Fig. 3 shows the same gripping member viewed from the side of the load pallet and Fig. 4 shows the same gripping member viewed from above. Fig. 5 shows another embodiment of gripping members for use in a load pallet constructed in the embodiment of Fig. 4. Fig. 6 shows the gripping member according to Fig. 5 viewed from above. Fig. 7 shows a goods vertical supporting section on a smaller scale with a locking contrivance for the gripping members. Fig. 8 shows a goods supporting section having a pivot connection, and Fig. 9 shows a goods vertical supporting section pulled apart to be arranged upon or removed from a load pallet. Fig. 10 shows the arrangement of lateral supports adapted to be connected between vertical end sections, and Fig. 11 shows a method of connecting such lateral supports with one another. Fig. 12 represents on a larger scale rigid means to secure lateral supports viewed from the side.

Fig. 13 shows the same means viewed from the end, and Fig. 14 shows the same means viewed from above. Fig. 15 shows movable contrivances to secure lateral supports. Fig. 16 shows the arrangements according to Fig. 15 viewed from the end thereof, and Fig. 17 shows the same arrangements viewed from above. Fig. 18 shows a locking device for the securing means according to Fig. 15 viewed from above.

The vertical goods supporting section according to the form of embodiment shown in the drawings consists of a frame, preferably constructed from bent and welded metal tubes. The frame consists of a tube bent to U-shape with two substantially parallel shank portions 1 and 2 and an intermediate portion 3 connecting the same. Welded near each of the free ends of the shanks 1, 2 is a tube bent to somewhat over 90°, the one shorter shank portion 4 of said tube extending substantially parallel with the intermediate portion 3, and the other longer shank portion 5 extending in a divergent direction from the shanks 1 and 2 of the U-tube upwardly in welded engagement with the intermediate portion 3. Straight tubes 6 are welded respectively intermediate shank portions 4 and the intermediate portion 3 of the U-shaped tube, and straight tubes 7 are welded to brace tubes 6 laterally between shank portions 5 and the legs of the U-shaped tube, respectively. The vertical goods section consequently consists of two stiff parts which are only connected by the portion 8 of the intermediate portion 3 which lies intermediate the welded connections of the upper extremities of the straight tubes 5. This latter part is made resilient so that the two section halves may be separated, as will appear from Fig. 9. They may be separated apart by the fact that the frame portion 8 is resilient, or that the section is provided with a joint 9, as shown in Fig. 8, or that the section is constructed with the intermediate portion 3 consisting of sections adapted to be displaced telescopically relative to one another. A locking contrivance is adapted for the locking of the frame halves in an adjusted position, which contrivance may consist of an endless band 10 which is vertically displaceable on the section. When the band 10 is displaced in the downward direction, the frame halves will consequently be brought together.

The vertical goods supporting section is provided with two gripping members 11, which are formed so that they may grip around a corner of a load pallet in a manner to rigidly hold the goods section in place. The load pallet is of a conventional design and consists of a number of boards 12 forming a load supporting surface. The boards are spaced with nails on the lower side at the ends and in the middle thereof by means of transversely extending boards 13, which have skirting blocks arranged under the same. The skirting blocks 14 rest in turn on longitudinal...
ly extending boards 15 fastened with nails. The space between the load bottom boards 12 and the lowermost boards 13 is adapted so that the clevis of a clamp to may be passed freely beneath the load bottom. A gripping member 11 is welded to each corner of the vertical section, where the shanks 1, 2 of the U-shaped tube terminate, and consists of two welded angular sections welded together at right angles, wherein one shank 16 is welded parallel to the bottom of the section and the other shank 17 extends at right angles out from the bottom of the section. The shank 17 projecting from the frame extends for a distance which is somewhat longer than the dimension of the skirting block 14, in the longitudinal direction of the load pallet. This shank 17 is provided at the free end thereof with a welded angular section 18 extending in parallel to the frame bottom inwardly toward the load foot and is placed so as to bear on the inner corner between the skirting block 14 and the lower side of the load supporting surface, when the gripping member 11 is laid upon the outer corner of the load pallet, as will appear from Fig. 1. The length of this angular section 18 is such that after the vertical section has been lowered upon the pallet with the section halves in the separated condition, upon construction of the section halves the portions 18 of the gripping members extend inwardly underneath the load supporting surface. The skirting bands downstairs as far as possible, the vertical section will be steadied on the load pallet and cannot move in any direction.

The form of embodiment of the gripping members shown in Figs. 5 and 6 is intended to be used for a load pallet made from U-sections 13. Here, the shanks of the gripping members are adapted from two U-sections 30 and 21 welded together at right angles to one another. The part 21 projecting from the frame bottom is provided with an inwardly extending part 22 fitting in underneath the frame of the load pallet to lock the vertical vertical section, so that the latter cannot be pulled out in the longitudinal direction of the foot.

The lateral supports are so designed as to permit intermediate two vertical end sections without the necessity of any special contrivance on the vertical section. The lateral supports consist of a rectangular frame 23 of bent metal tubing, sections are made of a size such that they either cover a whole side or a portion thereof (for instance one half of the side). The surface within the frame may be filled with panels, nets or the like made from metal, wood, fiber, plastic or the like. The short sides 24 of the frame, that is to say, the sides intended to receive to the pallet, are provided with both rigid and with pivotal fittings. The rigid fittings 25, 26, which appear from Figs. 12–14, consist of substantially rectangular sheet-metal pieces welded to opposite sides of the frame tube 24 and displaced for a distance relatively to each other in the longitudinal direction of the tube 24. The fittings 25, 26 extend for a distance outside the frame and are bent at their extremities to a circular shape so as to be permitted to embrace the tube 2 in the adjacent vertical section. The outer corners of the fittings facing one another are cut obliquely at approximately an angle of 45°, so that an intermediate space is obtained between the fittings, which is at least equal to the diameter of the tube portion 2 to be embraced in the vertical end section. The rigid fittings 25, 26, which are located near one end of the short side 24 of the lateral support, while the pivotal fittings 27, 28, are located near the other end. The pivotal fittings 27, 28 are noted for the appearance of which can be seen from Figs. 15–18, have approximately the same configuration as have the rigid fittings 25, 26, that is to say, they consist of rectangular sheet-metal pieces, which are bent at their ends so as to be permitted to embrace together a tube portion 1 or 2 on the vertical end section. However, the fittings 27, 28 are not secured directly to the tube 24 of the lateral frame but are welded to a rectangular plate 29, which rotatably connected to the tube 24 by means of a pin 30 extending therethrough. A washer 31 is inserted between the plate 29 and the tube 24, so that the rectangular plate 29 is kept at some distance from the tube 24. The plate 29 extends for a distance outside the fittings, and the part 32 thereof is bent inwardly towards the tube 24 so as to form a small angle to the longitudinal axis of the tube 24. A locking strap 33 formed so as to embrace the tube 24 and the plate portion 32, is adapted to be rotated relative to each other, to lock the fittings 27, 28 in their adjusted position. The pin 30, which keeps the fitting, may also be extended for a distance outside the tube 24, whereby the fitting may be displaced at right angles to the tube, when the fitting takes its swing-out position, which might be necessary to permit the swinging in of a lateral support tucked between the vertical sections. At the insertion of a lateral support 23, it is first brought into an oblique position to the vertical sections, so that the outer frame tube 1 or 2 in the same may be introduced into the space a between the rigid fittings 25, 26. The lateral support 23 is then swung down to a level with the lateral tubes 1, 2 of the gable supports, and the rotatable fittings 27, 28 swung away beforehand on each side are turned so as to embrace the corresponding tube parts 1 or 2 of the gable supports. The locking straps 33 are then thrust over the projecting parts 32 of the rectangular plates, and are wedged.

The lateral supports may also be connected mutually by the arrangement of apertured lugs 34 on adjacent tube parts, as shown in Figs. 11, a pivot pin 35 being thrust through said lugs. In addition to lateral supports, shelves may also be connected with the gable supports in the same manner as the lateral supports. These shelves may then be divided into two parts 36, 37 pivoted relatively to each other, whereby rigid fittings may be used and insertion and removal may take place by means of the parts 36, 37 being turned angularly relatively to each other. Shelves may also be comprised by means of welded fittings 38 on horizontal tube parts 7 in the vertical sections, as will appear from Fig. 1.

What I claim is:

1. A vertical end section adapted to be removable secured to an end edge of a rectangular load pallet having horizontal end-supporting surfaces supported by rectangular skirting blocks arranged at the corners of said load-supporting surface, said vertical end section comprising two coplanar vertical skink sections portions connected together at their upper ends and separable at their lower ends for compaction and transport. The pallet has cylindrical vertical sections portions extending parallel to said first vertical portion and adapted to contiguously engage the upper surface of the pallet load supporting surface, a first vertical portion parallel to the pallet end edge and adapted to contiguously engage the corresponding outer end surface of the associated pallet corner skinking block, a second vertical portion at right angles to said first vertical portion and adapted to contiguously engage the corresponding outer surface of said associated corner skinking block, and a third vertical portion extending parallel to said first vertical portion and adapted to contiguously engage the face of said corner skinking block which is opposite the end surface engaged by said first vertical portion, the lower ends of said vertical skink portions being normally maintained adjacent each other.

2. Apparatus as defined in claim 1 wherein said second end section is of unitary construction and said vertical skinking portions are resiliently connected to each other at their upper ends by means of a bendable metal bridging connection, said lower ends of said skinking portions being biased together by said resilient bridging connection.

3. Apparatus as defined in claim 1 wherein said two vertical skinking portions of said end section are each of
unitary construction and are pivotally connected to each other at their upper end portions by means of a hinge connection, and locking means releasably connecting together the lower ends of said shank portions to restrain the same against outward coplanar movement relative to each other.

4. Apparatus as defined in claim 1 and further including locking means releasably connecting together the lower ends of said shank portions to restrain the same against outward coplanar movement relative to each other.

References Cited in the file of this patent

UNITED STATES PATENTS

884,434 Wolgamott Apr. 14, 1908
1,105,734 Wilcox Aug. 4, 1914
1,216,291 Diescher Feb. 20, 1917
2,235,719 Matarese Mar. 18, 1941
2,615,747 Olson Oct. 28, 1952