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(54) **COLLAPSIBLE STORAGE SYSTEM FOR PALLETS AND A STORAGE SYSTEM COMPRISING SUCH A COLLAPSIBLE STORAGE SYSTEM**

(57) A collapsible storage system (1) for pallets comprising a first, a second, a third and a fourth frame member (2, 3, 4, 5). The frame members are arranged in a quadrangle with the first and the second frame members (2, 3) arranged at opposing sides of the quadrangle and the third and the fourth frame members (4, 5) extend, at opposing sides of the quadrangle, between the first and the second frame members. The first and the second frame members (2, 3) have transversal posts (6, 7, 8, 9) extending from their respective longitudinal end portions. The third and the fourth frame members (4, 5) are provided with through bores (10) at their respective longitudinal end portions, for pivotal connection of the respective end portions of the first and the second frame members (2, 3).

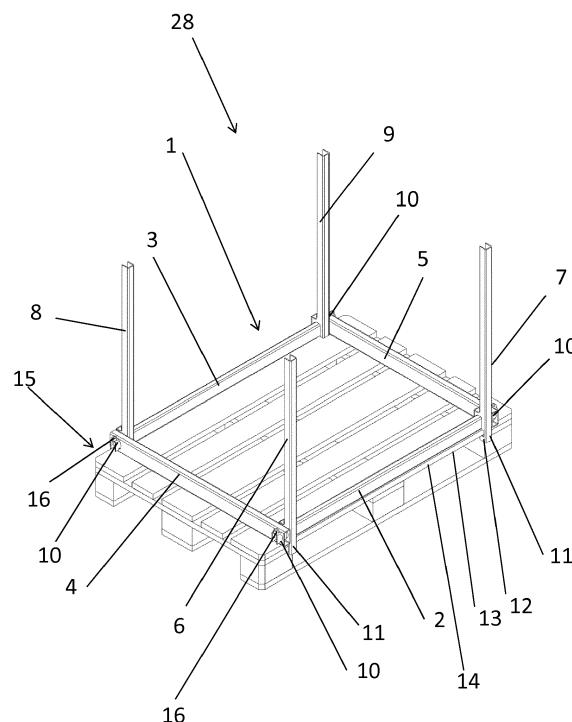


Fig. 1

Description

Technical field

[0001] The present invention relates to a collapsible storage system for pallets and a storage system comprising a collapsible storage system for pallets.

Background

[0002] A storage system for pallets generally consists of posts, sometimes with wire netting among others in between the posts, the posts arranged standing up accomplishing a half open box structure.

[0003] Storage systems for pallets are today used on various different types of pallets, thereby accomplishing a half open box on the pallet where goods could be placed while the pallet is in transit or stationary.

[0004] Storage system for pallets may have a grip function such that the storage system may be firmly connected to a pallet. Storage systems in general may be collapsible, permitting the storage system to be stored in a collapsible format, requiring smaller storage space.

[0005] In certain cases, the user of storage systems for pallets would like to have a relative low weight storage system that can be both collapsible and provide a high level of security and strength when the storage system contains large quantities of goods. In certain cases, the user of storage systems for pallets would furthermore like to be able to load the storage system from all four sides, still keeping the same high level of security and strength. In certain cases, the user of storage systems for pallets, would furthermore like to be able to use the space over a pallet and its related storage system for other work related activities. However, a storage system for pallets with the all above mentioned functions would require a rather complex and expensive technical solution.

[0006] It is therefore desirable to accomplish a storage system for pallets that is inexpensive to manufacture, that has a relative low weight, that is collapsible, that has a high level of security and strength, and that could provide a possibility for the user to use the space over a pallet and its related storage system for other work related activities.

Summary of invention

[0007] An objective of the present invention is thus to accomplish a storage system for pallets that is inexpensive to manufacture, that has a relative low weight, that is collapsible, that has a high level of security and overall strength, and that could provide a possibility for the user to use the space over a pallet and its related storage system for other work related activities.

[0008] According to one aspect, the invention concerns a collapsible storage system for pallets comprising a first, a second, a third and a fourth frame member.

Wherein the frame members are arranged in a quadrangle, with the first and the second frame members arranged at opposing sides of the quadrangle and the third and the fourth frame members extend, at opposing sides of the quadrangle, between the first and the second frame members. The system is characterised in that the first and the second frame members having transversal posts extending from their respective longitudinal end portions. Wherein the third and the fourth frame members are provided with through bores at their respective longitudinal end portions, for pivotal connection of the respective end portions of the first and the second frame members.

[0009] An advantage with the solution, is that by having a pivotal connection integrated in the frame members, it decreases the number of components needed and provides an overall good robustness. By using for instance hollow frame members in the longitudinal direction and/or a material that is of relative low weight the solution will be of relative low weight without impairing the overall strength.

[0010] The above system may be configured according to different optional embodiments. For example, wherein the first frame member may be pivotable around a first axis extending along a longitudinal length of the first frame member, and the second frame member may be pivotable around a second axis extending along a longitudinal length of the second frame member. Further may permit the first and the second frame members each to be transferrable between a first collapsed position and a second upright position.

[0011] An advantage with the solution may that by having pivotable frame members the system may be collapsible. This collapsible solution may provide at the same time a good overall strength of the system, and furthermore maximising the area on a pallet which could be loaded with goods.

[0012] According to an embodiment of the invention, the third and the fourth frame members may each comprise stop portions, extending towards the centre of its respective through bore, for contact with the respective end portions of the first and the second frame members in their first collapsed position and their second upright position.

[0013] An advantage with the solution may that the stop portions may permit stopping the pivoting movement of the frame members and consequently the pivoting movement of the connected posts at a first collapsed position and a second upright position.

[0014] According to an embodiment of the invention, the third and the fourth frame members may each comprise first recesses, located within each through bore at a location corresponding to the second upright position, the first recesses extending outwardly from the centre of its respective through bore. Further wherein the first and the second frame members may each comprise second recesses, located at longitudinal end portions of the first and the second frame members at a location corresponding to the third and the fourth frame members. Further

wherein the first and second recesses may be arranged to prevent movement of the first and the second frame members at the second upright position. Further wherein the first and the second recesses may be arranged to prevent the first and the second frame members from sliding in the through bores, may permit the first and the second frame members to be securely connected with the third and the fourth frame members.

[0015] An advantage with the solution, may that by having described recesses in the frame members, the frame members and consequently the posts may be permitted to be held in the second upright position, which may result in the posts being standing and held up when the system, with a pallet underneath, is positioned on a floor waiting to be loaded with goods. Another advantage having described recesses, may be in preventing the first and the second frame member from sliding in the through bores, may permit the first and the second frame member to be securely connected with the third and the fourth frame member. The solution may therefore result in a high level of security and an overall strength of the system.

[0016] According to an embodiment of the invention, the storage system may comprise grip means extending from longitudinal end portions of each post, wherein the longitudinal end portions are located where the posts are connected to the first and the second frame members. Further the grip means may comprise a protruding portion provided to be positioned approximately abut against a horizontal surface of a first pallet member of a first pallet, the surface intended to face downwards when the first pallet is positioned on a floor and when the corresponding first or the second frame members are in the second upright position.

[0017] An advantage with the solution, is that the grip means may grip a pallet, and the first and the second frame member may have an additional stop restricting the frame members and consequently the posts from pivoting past the second end position. The solution may therefore result in a high level of security and an overall strength of the system, when the system has a pallet underneath, and is fully loaded with goods applying heavy forces on the frames and the posts.

[0018] According to an embodiment of the invention, the storage system may comprise fastening means, removably located at each longitudinal end portion of the first and the second frame members, and positioned approximately abut against the third and the fourth frame members. Each fastening means may protrude outside the diameter of each through bore. Wherein the posts are connected to the first and the second frame members and located adjacent to the third and the fourth frame members such that the pivoting movement of the first and the second frame members and consequently the pivoting movement of the posts may be unaffected. Thereby may prevent the first and the second frame members from sliding in the through bores. May further permit the first and the second frame members to be

securely connected with the third and the fourth frame members.

[0019] An advantage with the solution, is that the fastening means may prevent the first and the second frame member from sliding in the through bores, thus may result in the first and the second frame member to be securely connected with the third and the fourth frame member. As the posts are connected and positioned on to the frame members in described manner, it may provide an equal strength and security to the solution, no matter if the goods are loaded on top of frame members three and four or on top of frame members one and two, the goods applying forces on different sides of the posts. The solution may therefore result in a high level of security and an overall strength of the system.

[0020] According to an embodiment of the invention, the storage system may comprise a fifth frame member and a sixth frame member. Wherein the fifth and the sixth frame members each extend at least between two of the posts, for providing a support structure for goods, such as a pallet, loaded thereon.

[0021] An advantage with the solution, is that goods, such as a second pallet may be positioned on top of the fifth and the sixth frame member. This second pallet can for instance be used as a workbench for the user. Another advantage is that the fifth and the sixth frame member may strengthen the collapsible storage system even further.

[0022] According to a second aspect, the invention concerns a storage system comprising a collapsible storage system for pallets, the storage system further comprising at least a first pallet on which the collapsible storage system for pallets rests.

[0023] An advantage with the solution, is that a complete package including both a collapsible storage system and a pallet may be provided to the user.

[0024] The first and the second post cannot be rotated around the first frame member, and the third and the fourth post cannot be rotated around the second frame member.

[0025] There can be more than four posts connected to the frame members.

[0026] When the first and/or the second frame member has pivoted from the first end position to the second end position, the user can then slightly lift the posts, and subsequently the first and/or the second frame member will be able to drop down into the first recesses. The second recesses in the first and the second frame member have been arranged for this step to be possible, as the second recesses are positioned to provide space in between the frame members. The second recesses could either be relatively small as shown in the drawings, or a pair of these second recesses could be replaced by a longer recess with no material in between them.

[0027] Four through bores, each through bore located separately at each longitudinal end portions of the third or the fourth frame member, as described in claim 1, means that there are four end portions and four through

bores, one through bore located at each end portion.

[0028] The collapsible storage system is suitable to be used for pallets. A pallet could be a so called EUR-pallet in wood. A pallet could also be of any other dimension, format and material such as plastic or metal etc. A pallet has normally several first pallet members arranged in parallel. Furthermore a pallet has normally several second pallet members arranged in parallel, but arranged perpendicular to the first pallet members. Furthermore a pallet normally has pallet blocks. Furthermore a pallet has normally several third pallet members arranged in parallel, and arranged in parallel to the first pallet members. Wherein the first pallet members are intended to hold goods when the pallet is positioned on a floor. Wherein the third pallet members are intended to face the floor. Wherein the pallet blocks and the second pallet members are in between the first and the third pallet members. The second pallet members are arranged on top of the pallet blocks.

[0029] The collapsible storage system is normally arranged to be less than 25 kg, as the user then without any huge physical effort will be able to handle the system.

[0030] The frame members and the posts could be produced using square shaped hollow metal bars. The frame members could also be produced of any other material and format, permitting the system to be as strong and light weight as possible.

[0031] A storage system comprises a collapsible storage system for pallets and a first pallet. A storage system could also comprise a second pallet, a third pallet etc.

[0032] A collapsible storage system could further comprise additional frame members, arranged in between the existing frame members, strengthening the collapsible storage system further.

[0033] Wherein the first and the second frame member extending through the through bores, permitting the first frame member to be pivotally connected to the third and the fourth frame member and the second frame member to be pivotally connected to the third and the fourth frame member, thereby, when performing the pivoting movement, the first post in conjunction with the second post and the third post in conjunction with the fourth post may alternate between a first collapsed position and a second upright position. Wherein in the first collapsed position the posts are substantially parallel to the frame members, and wherein in the second upright position the posts are substantially perpendicular to the frame members.

[0034] The system may comprise stop portions extending towards the centre of its respective through bore, permitting stopping the pivoting movement of the first and the second frame members at the first and/or the second position, thereby, when performing the pivoting movement, the first post in conjunction with the second post and the third post in conjunction with the fourth post may stop at the first and/or the second position.

[0035] The first and the second recesses permit the first post in conjunction with the second post and the third post in conjunction with the fourth post to be held at the

second end position.

[0036] Wherein the fifth frame member being substantially perpendicularly arranged to and removably connected longitudinal end portion to longitudinal end portion to the first and the third post, wherein the longitudinal end portions of the first and the third posts are located furthest away from where these posts are connected to the first and the second frame member. Wherein the sixth frame member being substantially perpendicularly arranged to and removably connected longitudinal end portion to longitudinal end portion to the second and the fourth post, wherein the longitudinal end portions of the second and the fourth posts are located furthest away from where these posts are connected to the first and the second frame member.

Brief description of drawings

[0037] The invention is now described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 shows a collapsible storage system for pallets in a perspective view with all posts in the second upright position according to an embodiment of the invention, and

Fig. 2 shows a collapsible storage system for pallets in a front view with all posts in the second upright position according to an embodiment of the invention, and

Fig. 3 shows a collapsible storage system for pallets in a perspective view with all posts in the first collapsed position according to an embodiment of the invention, and

Fig. 4 shows a collapsible storage system for pallets in a perspective view with two posts in the first collapsed position and two posts in the second upright position according to an embodiment of the invention, and

Fig 5. shows a collapsible storage system for pallets in a detailed view of a through bore and its related components according to an embodiment of the invention, and

Fig. 6 shows a collapsible storage system for pallets in a front view with all posts in the first collapsed position according to an embodiment of the invention, and

Fig. 7 shows a collapsible storage system for pallets in a perspective view wherein the fifth and the sixth frame members each extend between two of the posts according to an embodiment of the invention, and

Fig. 8 shows a collapsible storage system for pallets in a perspective view wherein a second pallet rests upon the fifth and the sixth frame members according to an embodiment of the invention, and

Fig. 9 shows a frame member with second recesses

Description of embodiments

[0038] In the following, a detailed description of a collapsible storage system for pallets is provided.

[0039] Fig. 1 shows a collapsible storage system for pallets 1 according to an embodiment of the invention, made up of a first frame member 2, a second frame member 3, a third frame member 4 and a fourth frame member 5. The frame members 2, 3, 4, 5 are arranged in a quadrangle with the first 2 and the second frame members 3 arranged at opposing sides of the quadrangle and the third 4 and the fourth frame members 5 extend, at opposing sides of the quadrangle, between the first 2 and the second frame members 3. The first 2 and the second frame members 3 having posts 6, 7, 8, 9 extending from their respective longitudinal end portions. Wherein the third 4 and the fourth frame members 5 are provided with through bores 10 at their respective longitudinal end portions, for pivotal connection of the respective end portions of the first 2 and the second frame members 3. Further comprising grip means 11 extending from longitudinal end portions of each post 6, 7, 8, 9, wherein the longitudinal end portions are located where the posts 6, 7, 8, 9 are connected to the first 2 and the second frame members 3. Further the grip means 11 comprise a protruding portion 12 provided to be positioned approximately abut against a horizontal surface 13 of a first pallet member 14 of a first pallet 15, when the corresponding first 2 or the second frame members 3 are in the second upright position. Further the surface 13 is intended to face downwards when the first pallet 15 is positioned on a floor. The posts 6, 7, 8, 9 are located adjacent to the third 4 and the fourth frame members 5. The collapsible storage system 1 further comprises fastening means 16, removably located at each longitudinal end portion of the first 2 and the second frame members 3, and positioned approximately abut against the third 4 and the fourth frame members 5, each fastening means 16 protruding outside the diameter of each through bore 10. The figure shows the collapsible storage system 1 with all posts 6, 7, 8, 9 in the second upright position. The figure further shows a storage system (28) comprising the collapsible storage system (1) and a first pallet (15).

[0040] Fig. 2 shows the collapsible storage system 1 according to an embodiment of the invention, with the first 2 and the second frame members 3 and consequently all posts 6, 7, 8, 9 in the second upright position. The figure further shows the first pallet 15 and its components. A pallet, such as the first pallet, has normally several first pallet members 14 arranged in parallel. Furthermore the first pallet has several second pallet members 17 ar-

ranged in parallel, but arranged perpendicular to the first pallet members 14 and connected to the first pallet members 14. Furthermore the first pallet 15 has pallet blocks 18 connected to the second pallet members 17. Furthermore the first pallet 15 has several third pallet members 19 arranged in parallel, and arranged in parallel to the first pallet members 14 and connected to the pallet blocks 18. The first pallet members 17 are intended to hold goods when the first pallet 15 is positioned on a floor. Wherein the third pallet members 19 are intended to face the floor. Wherein the pallet blocks 18 and the second pallet members 17 are in between the first 14 and the third pallet members 19. The second pallet members 17 are arranged on top of the pallet blocks 18. The horizontal surface 13 of the first pallet member 14 is intended to face downwards when the first pallet 15 is positioned on a floor.

[0041] Fig. 3 shows the collapsible storage system 1 according to an embodiment of the invention, with all posts 6, 7, 8, 9 in the first collapsed position. The first 2 and the second frame members 3 and consequently all the posts 6, 7, 8, 9 are substantially parallel with the third 4 and the fourth frame members 5 and substantially horizontal to the floor when the collapsible storage system 1 rests on a pallet which is positioned on the floor.

[0042] Fig. 4 shows the collapsible storage system 1 according to an embodiment of the invention. The first post 6 and the second post 7 are connected to the first frame member 2 and the third post 8 and the fourth post 9 are connected to the second frame member 3. The first 6 and the second post 7 are in the second upright position, which means that the first frame member 2 and the first 6 and the second post 7 are substantially vertical to the floor when the collapsible storage system 1 rests on a pallet which is positioned on the floor. The first frame member 2 is pivotable around a first axis 20 extending along a longitudinal length of the first frame member 2, and the second frame member 3 is pivotable around a second axis 21 extending along a longitudinal length of the second frame member 3, permitting the first 2 and the second frame members 3 each to be transferrable between the first collapsed position and the second upright position.

[0043] Fig. 5 shows a detailed view of the collapsible storage system 1 according to an embodiment of the invention. The third post 8, but also the fourth post 9 which is shown in e.g. Fig. 1, are in the second upright position. The third frame member 4, but also the fourth frame member 5 which is shown in e.g. Fig. 1, are provided with through bores 10 at the respective longitudinal end portions. The through bores 10 facilitate for pivotal connection of the respective end portions of the first 2 and the second frame members 3. An end portion of the second frame member 3 can be seen protruding through the through bore 10. The third frame member 4, but also the fourth frame member 5 which is shown in e.g. Fig. 1, each comprise stop portions 22, extending towards the centre of its respective through bore 10. The stop portions

22 are provided for contact with the respective end portions of the first 2 and the second frame members 3 in their first collapsed position and their second upright position. The protruding portion 12 of the grip means 11 is positioned approximately abut against the horizontal surface 13 of the first pallet member 14.

[0044] Fig. 6 shows the collapsible storage system 1 according to an embodiment of the invention. All posts 6, 7, 8, 9, are in the first collapsed position. Fastening means 16 are removably located at each longitudinal end portion of the first 2 and the second frame members 3, and positioned approximately abut against the third 4 and the fourth frame members 5, each fastening means 16 protruding outside the diameter of each through bore 10. The fastening means prevent the first 2 and the second frame members 3 from sliding in the through bores 10, and permit the first 2 and the second frame members 3 to be securely connected with the third 4 and the fourth frame members 5. The protruding portions 12 of the grip means 11 are furthermore shown in the figure. The third 4 and the fourth frame members 5 each comprise first recesses 23, located within each through bore 10 at a location corresponding to the second upright position. The first recesses 23 extending outwardly from the centre of its respective through bore 10. The first recesses 23 are arranged to prevent movement of the first 2 and the second frame members 3 at the second upright position. The first recesses 23 are arranged to prevent the first 2 and the second frame members 3 from sliding in the through bores 10, permitting the first 2 and the second frame members 3 to be securely connected with the third 4 and the fourth frame members 5.

[0045] Fig. 7 shows the collapsible storage system 1 according to an embodiment of the invention. A fifth frame member 24 extends between the end portion of the first post 6 and the end portion of the third post 8. A sixth frame member 25 extends between the end portion of the second post 7 and the end portion of the fourth post 9. All end portions of the posts here mentioned are the ones furthest away from the connection to the frame members.

[0046] Fig. 8 shows the collapsible storage system 1 according to an embodiment of the invention. A second pallet 26 rests upon the fifth 24 and the sixth frame members 25.

[0047] Fig. 9 shows a detailed view of the collapsible storage system 1 according to an embodiment of the invention. A frame member, either the first 2 or the second frame member 3, is shown in the figure, and comprises second recesses 27, located at longitudinal end portions of the frame members 2 or 3 at a location corresponding to the third 4 or the fourth frame members 5. The second recesses 27 in the first 2 and the second frame member 3 have been arranged to provide space in between the frame members as the first 2 or the second frame member 3 sits in the first recesses 23 in the through bore 10. The second recesses 27 could either be relatively small as shown in the drawing, or a pair of the second recesses

27 could be replaced by a longer recess with no material in between them.

5 Claims

1. A collapsible storage system for pallets (1) comprising a first (2), a second (3), a third (4) and a fourth frame member (5), wherein the frame members (2, 3, 4, 5) are arranged in a quadrangle with the first (2) and the second frame members (3) arranged at opposing sides of the quadrangle and the third (4) and the fourth frame members (5) extend, at opposing sides of the quadrangle, between the first (2) and the second frame members (3), **characterised in that** the first (2) and the second frame members (3) having transversal posts (6, 7, 8, 9) extending from their respective longitudinal end portions, wherein the third (4) and the fourth frame members (5) are provided with through bores (10) at their respective longitudinal end portions, for pivotal connection of the respective end portions of the first (2) and the second frame members (3).
2. A collapsible storage system for pallets (1) according to claim 1, wherein the first frame member (2) is pivotable around a first axis (20) extending along a longitudinal length of the first frame member (2), and the second frame member (3) is pivotable around a second axis (21) extending along a longitudinal length of the second frame member (3), permitting the first (2) and the second frame members (3) each to be transferrable between a first collapsed position and a second upright position.
3. A collapsible storage system for pallets (1) according to any of the claims 1-2, wherein the third (4) and the fourth frame members (5) each comprise stop portions (22), extending towards the centre of its respective through bore (10), for contact with the respective end portions of the first (2) and the second frame members (3) in their first collapsed position and their second upright position.
4. A collapsible storage system for pallets (1) according to any of the claims 1-3, wherein the third (4) and the fourth frame members (5) each comprise first recesses (23), located within each through bore (10) at a location corresponding to the second upright position, the first recesses (23) extending outwardly from the centre of its respective through bore (10), wherein the first (2) and the second frame members (3) each comprise second recesses (27), located at longitudinal end portions of the first (2) and the second frame members (3) at a location corresponding to the third (4) and the fourth frame members (5), wherein the first (23) and the second recesses (27) are arranged to prevent movement of the first (2) and

the second frame members (3) at the second upright position, wherein the first (23) and the second recesses (27) are arranged to prevent the first (2) and the second frame members (3) from sliding in the through bores (10), permitting the first (2) and the second frame members (3) to be securely connected with the third (4) and the fourth frame members (5).

5. A collapsible storage system for pallets (1) according to any of the claims 1-4, comprising grip means (11) extending from longitudinal end portions of each post (6, 7, 8, 9), wherein the longitudinal end portions are located where the posts (6, 7, 8, 9) are connected to the first (2) and the second frame members (3), the grip means (11) comprising a protruding portion (12) provided to be positioned approximately abut against a horizontal surface (13) of a first pallet member (14) of a first pallet (15), the surface (13) intended to face downwards when the first pallet (15) is positioned on a floor and when the corresponding first (2) or the second frame members (3) are in the second upright position.
6. A collapsible storage system for pallets (1) according to any of claims 1-5, comprising fastening means (16), removably located at each longitudinal end portion of the first (2) and the second frame members (3), and positioned approximately abut against the third (4) and the fourth frame members (5), each fastening means (16) protruding outside the diameter of each through bore (10), wherein the posts (6, 7, 8, 9) are connected to the first (2) and the second frame members (3) and located adjacent to the third (4) and the fourth frame members (5) such that the pivoting movement of the first (2) and the second frame members (3) and consequently the pivoting movement of the posts (6, 7, 8, 9) are unaffected, thereby preventing the first (2) and the second frame members (3) from sliding in the through bores (10), permitting the first (2) and the second frame members (3) to be securely connected with the third (4) and the fourth frame members (5).
7. A collapsible storage system for pallets (1) according to any of claims 1-6, comprising a fifth frame member (24) and a sixth frame member (25), wherein the fifth (24) and the sixth frame members (25) each extend at least between two of the posts (6, 7, 8, 9), for providing a support structure for goods, such as a second pallet (26), loaded thereon.
8. A storage system (28) comprising a collapsible storage system for pallets (1) according to any of claims 1-7, the storage system (28) further comprising at least a first pallet (15) on which the collapsible storage system for pallets (1) rests.

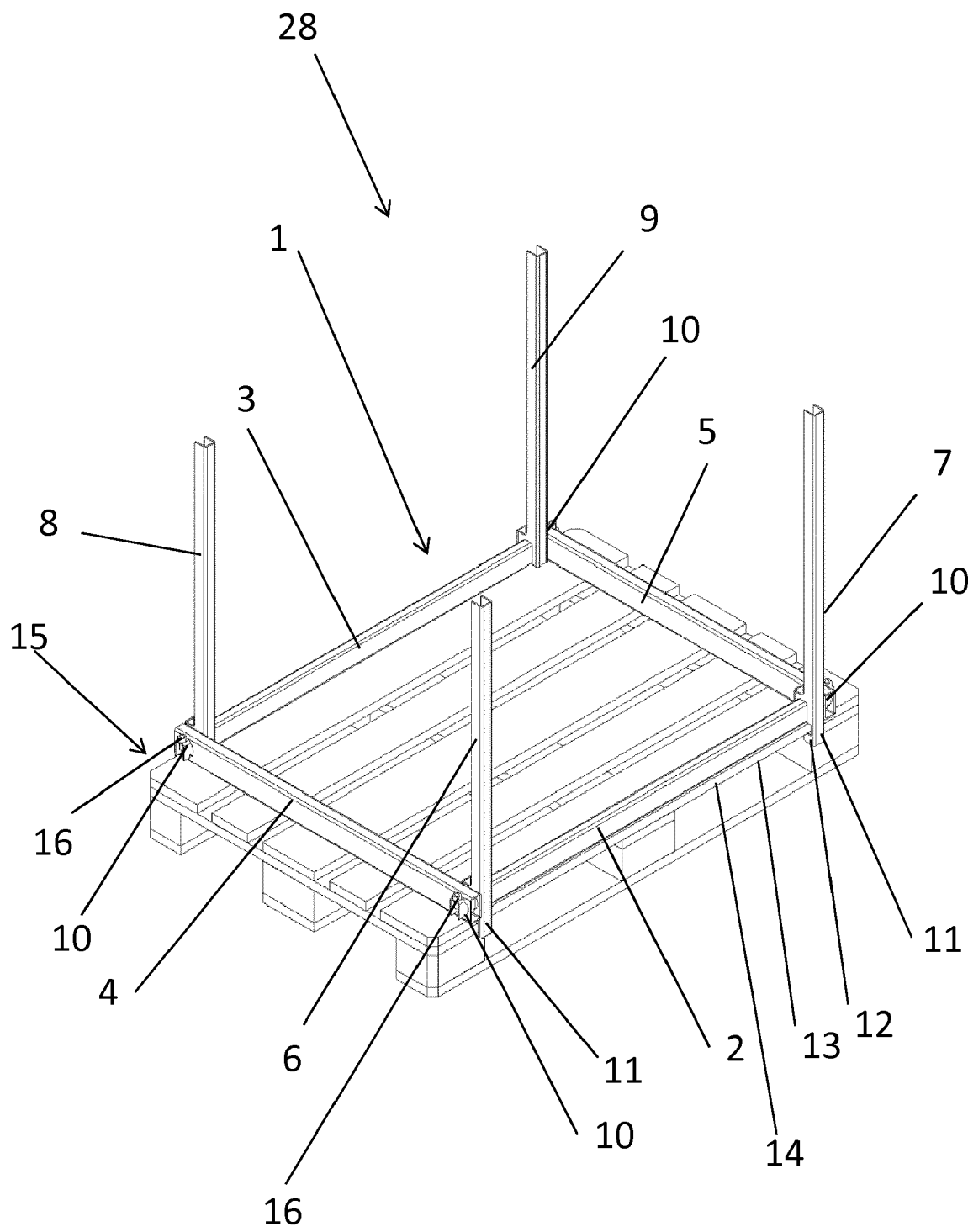


Fig. 1

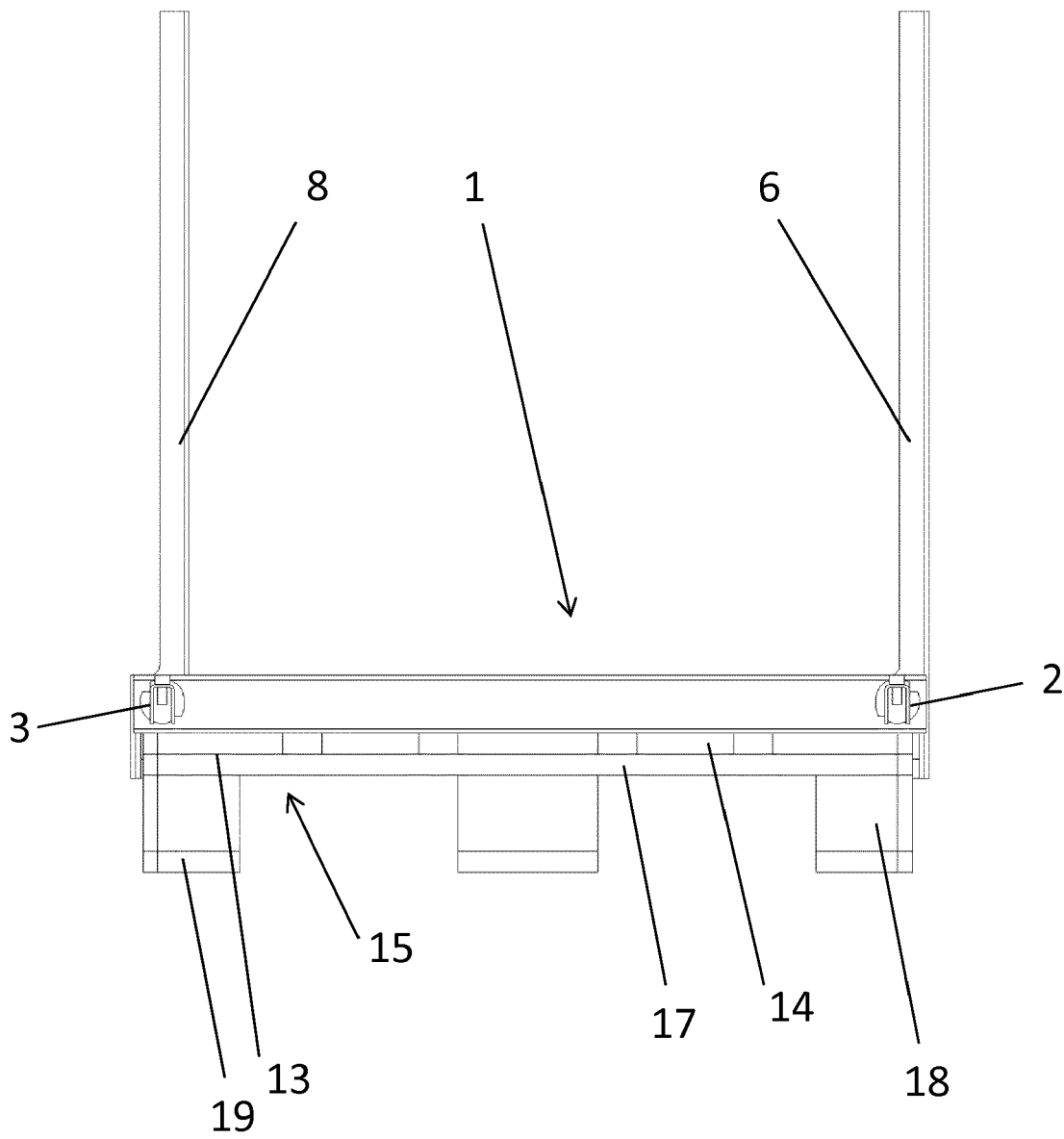


Fig. 2

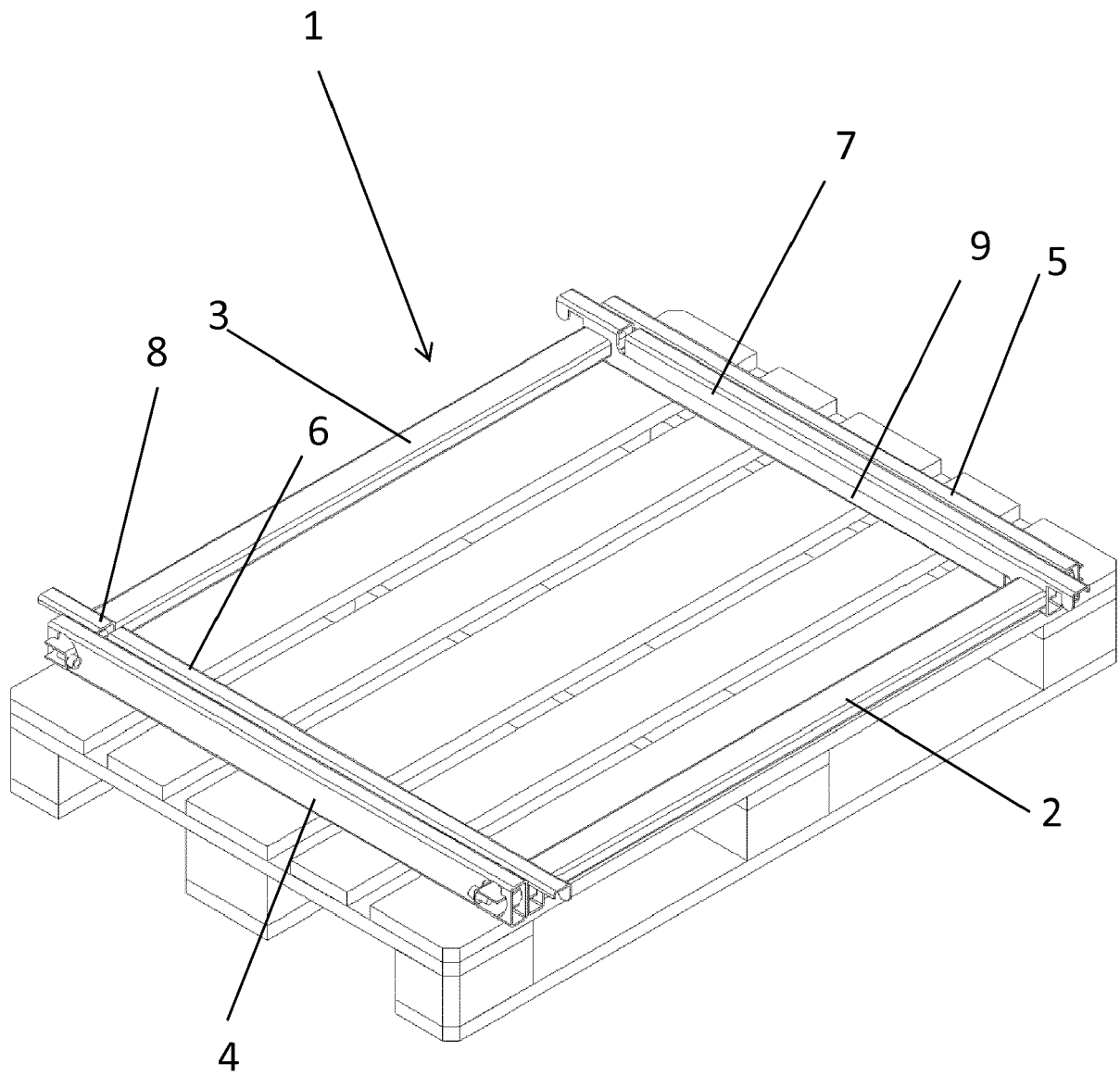


Fig. 3

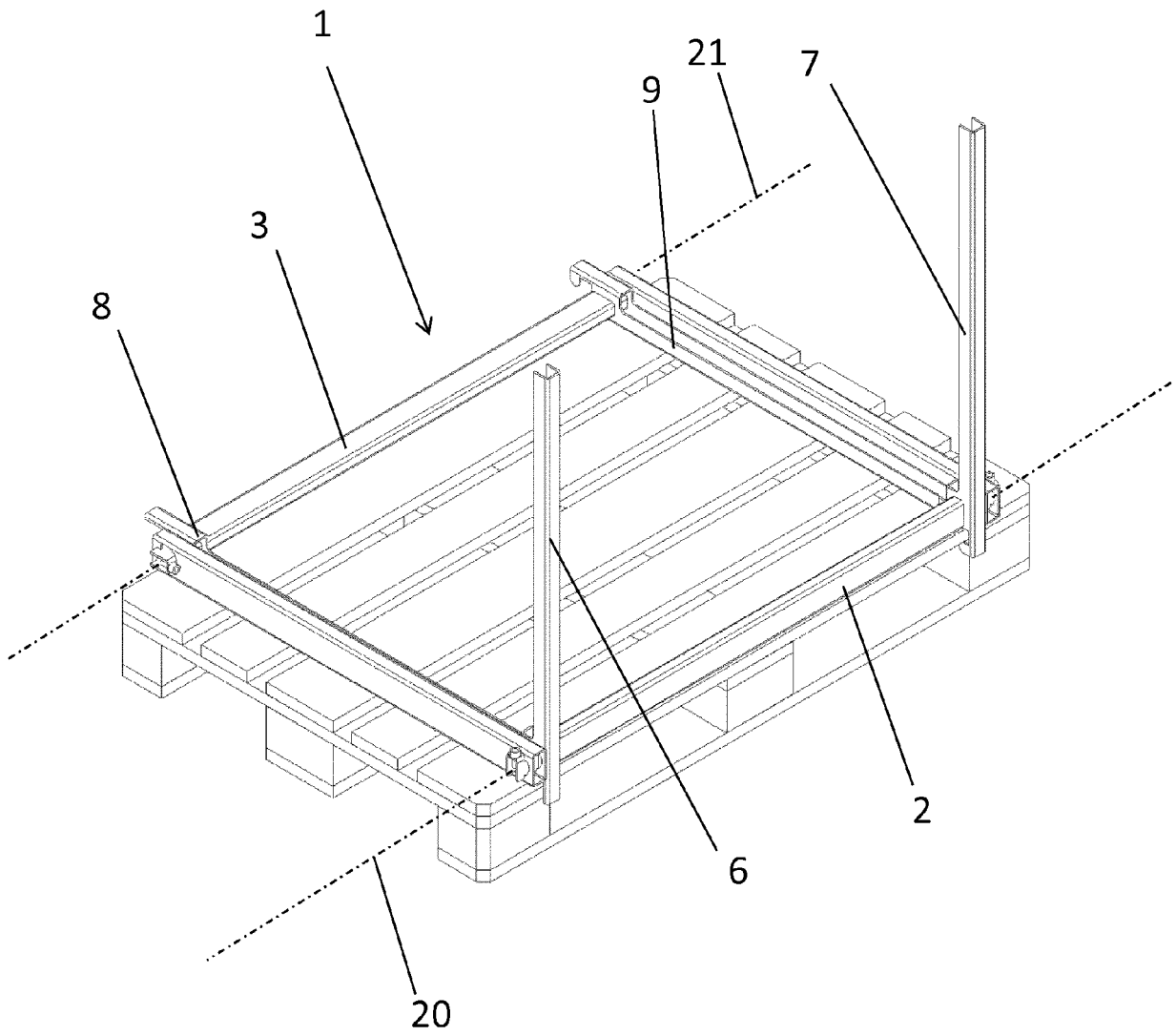


Fig. 4

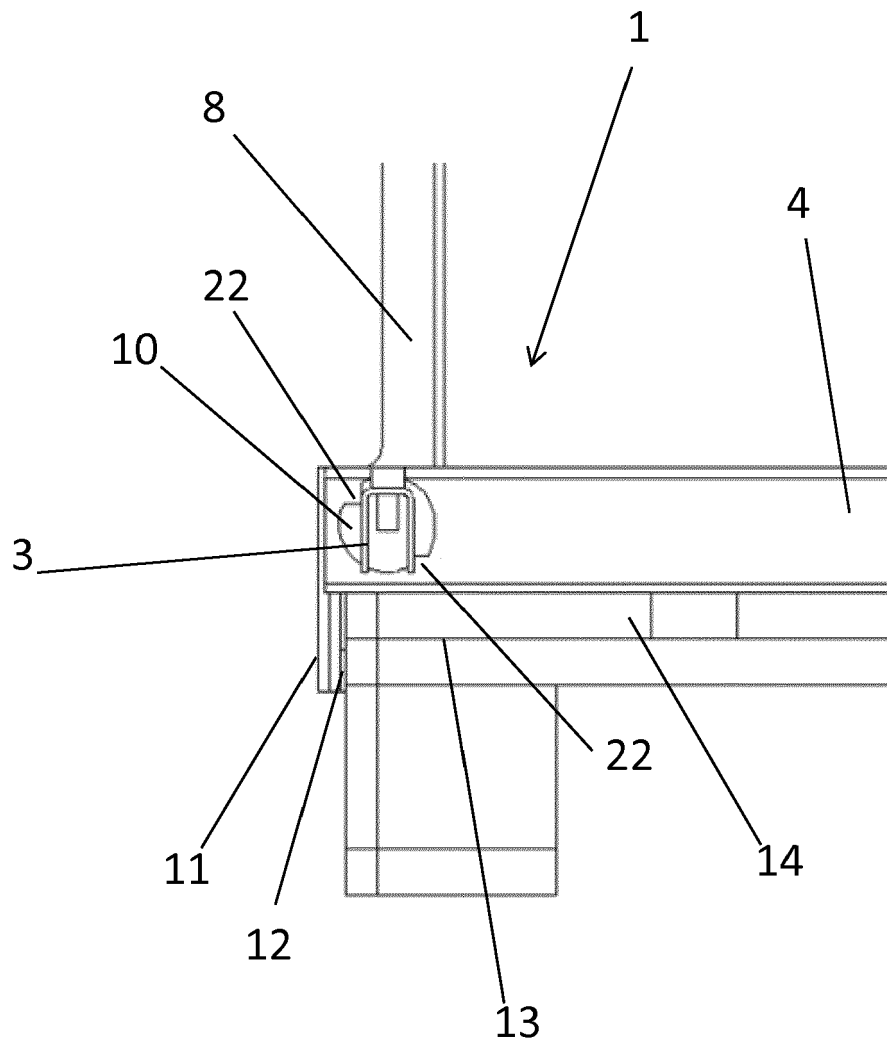


Fig. 5

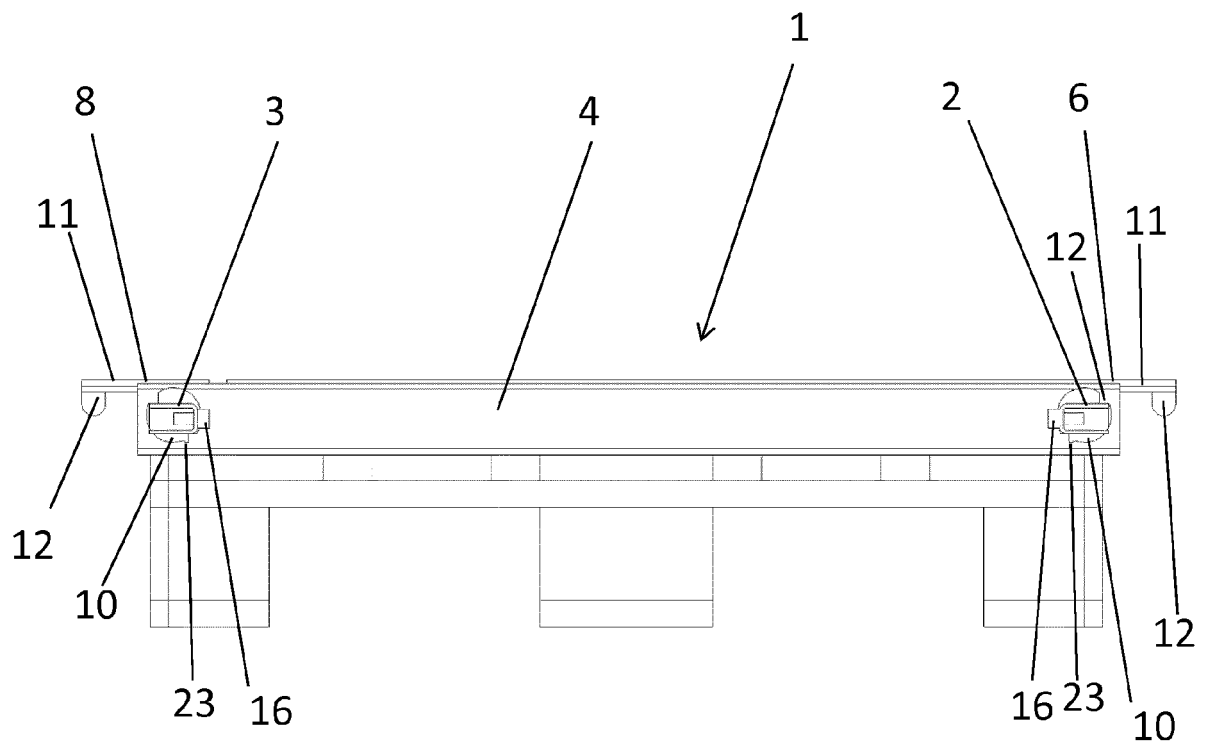


Fig. 6

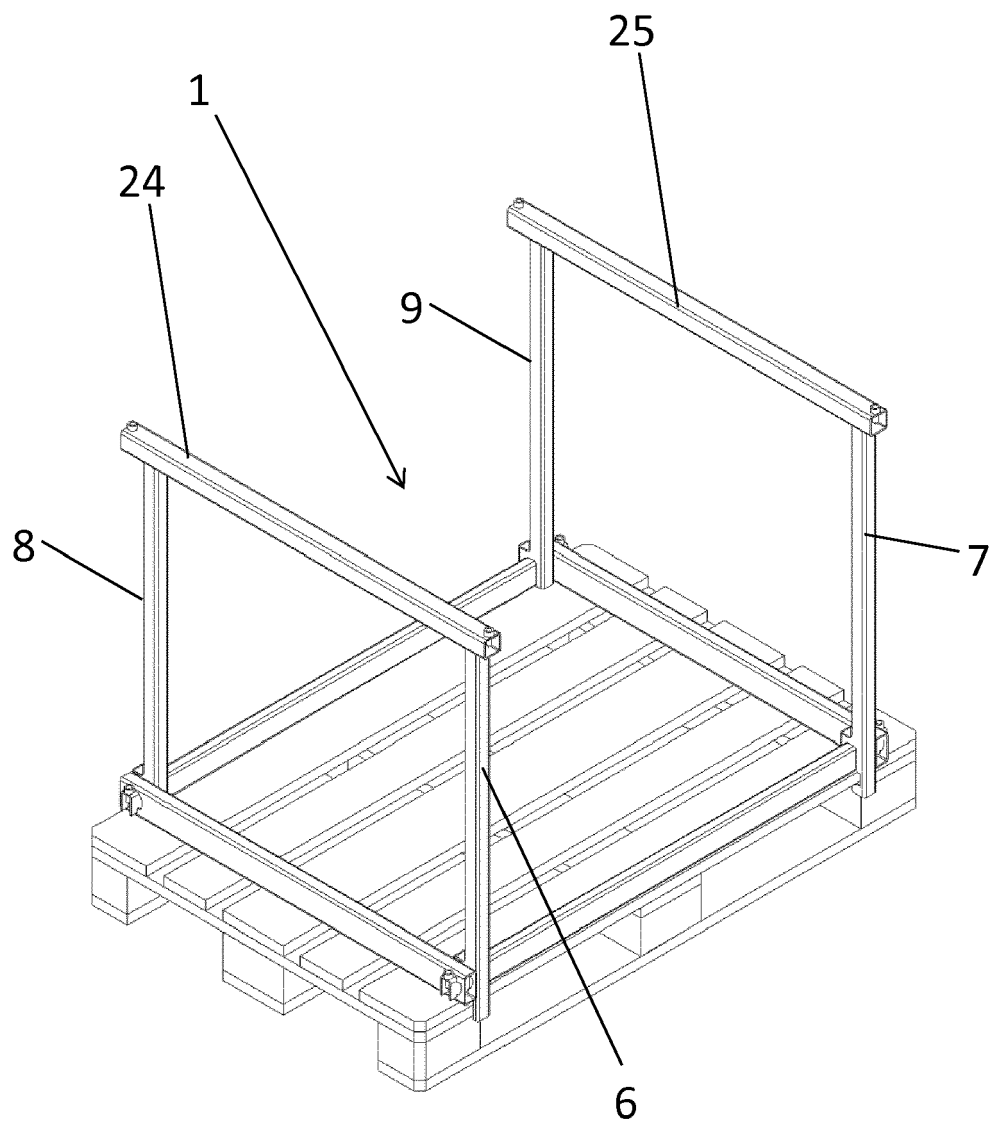


Fig. 7

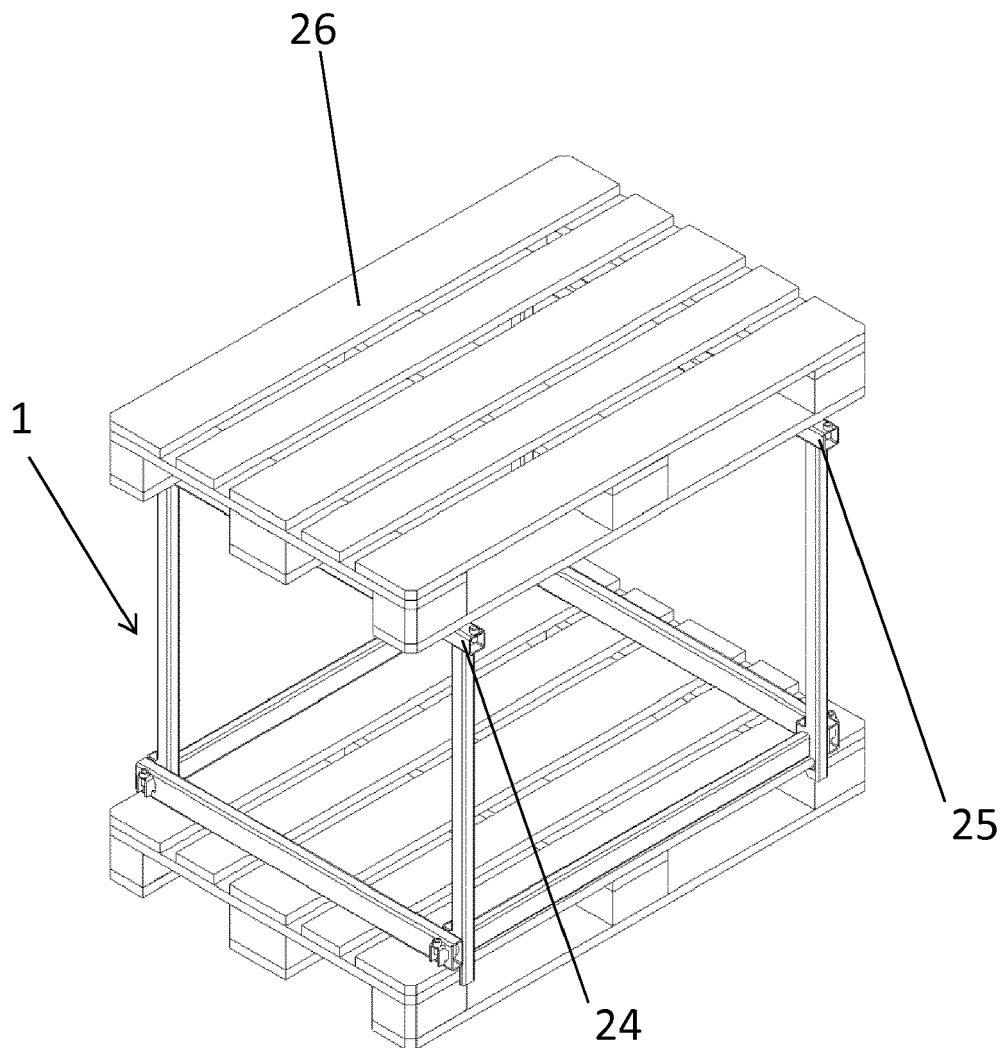


Fig. 8

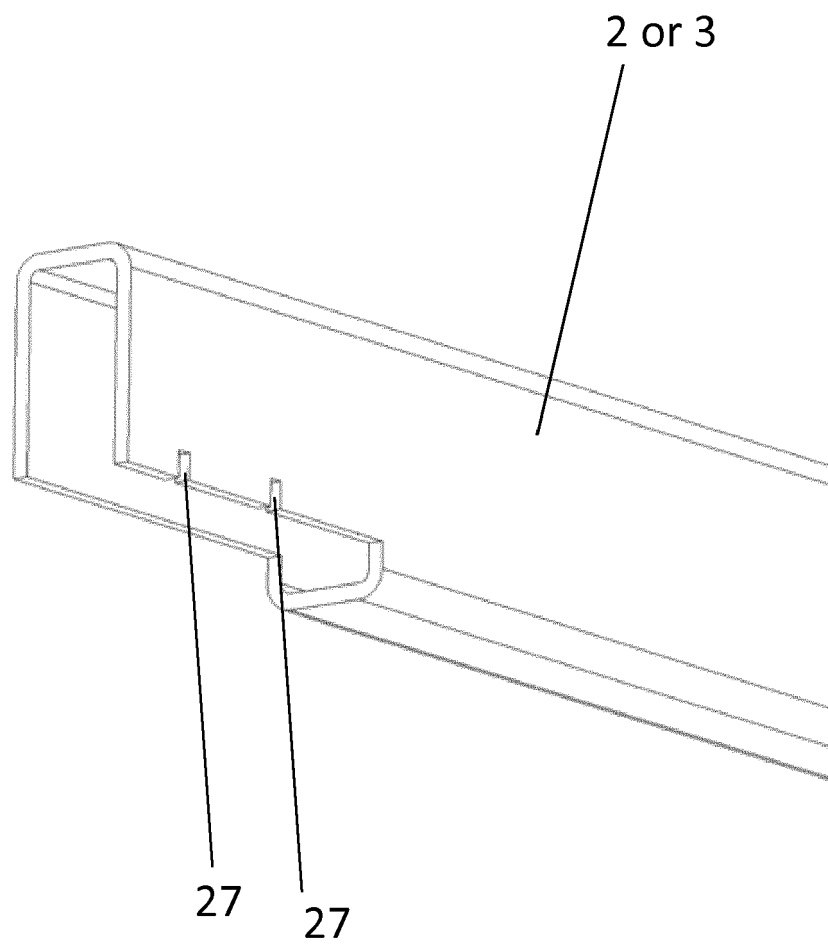


Fig. 9



EUROPEAN SEARCH REPORT

Application Number
EP 15 19 8439

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 200 12 639 U1 (KAISER FRANZ ANDREAS [DE]) 5 October 2000 (2000-10-05) * page 10, line 20 - page 14, line 38 * * figures 1,2 *	1-8	INV. B65D19/38
A	EP 2 357 142 A1 (NUMBER 1 LOGISTICS GROUP S P A [IT]) 17 August 2011 (2011-08-17) * paragraph [0019] - paragraph [0068] * * figures 1-9 *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 February 2016	Examiner Fitterer, Johann
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82