(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 481 843 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
01.12.2004 Bulletin 2004/49

(51) Int Cl.[7]: **B60P 3/07**

(21) Application number: **04251618.7**

(22) Date of filing: **22.03.2004**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

(30) Priority: **28.05.2003 GB 0312183**
12.11.2003 GB 0326327

(71) Applicant: **Adaptainer Ltd**
Ipswich IP4 1JX (GB)

(72) Inventors:
- **Clark, Jonathan**
  Ipswich IP4 1JX (GB)
- **van Donge, Arie**
  2970 Schilde (BE)

(74) Representative: **Copp, David Christopher et al**
Dummett Copp,
25 The Square,
Martlesham Heath
Ipswich, Suffolk, IP5 3SL (GB)

(54) Transport apparatus for cars

(57) The invention provides transport apparatus for transporting a plurality of cars. The apparatus comprises a container (1) and a plurality of removable lifting trays (34). The apparatus includes a plurality of reinforced side regions (22) at or adjacent the side walls (2,4), the reinforced regions (22) include a plurality of mounting means (30). The apparatus also comprises at least two removable lifting trays (34) for supporting a car thereon, each tray being suitable for supporting either front or rear wheels of a car. Each tray (34) includes locating means (40) on opposite sides thereof. The reinforced side regions (22) and trays (34) are arranged such the trays can be secured between reinforced side regions using by engaging the locating means (40) and mounting means (30) of the reinforced regions (22) to secure the tray (34) relative to the container (1) such that a car supported on said trays may be suspended off the floor during transport of said container.

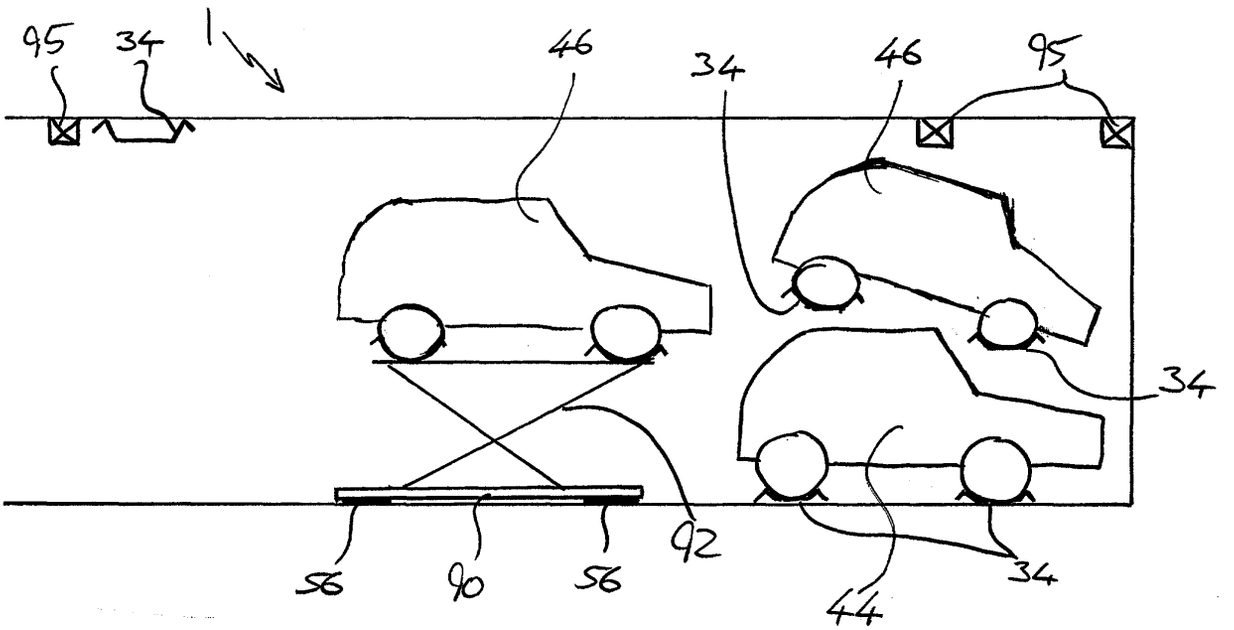

Fig. 9

EP 1 481 843 A2

Description

[0001] The present invention relates to freight containers, particularly to containers adapted to transport cars and other goods long distances, especially by cargo ship. The invention extends to a method of supporting cars in a freight container.

[0002] Goods for import or export are often loaded into containers or trailers for long distance transport. Containers are typically enclosed boxes that may be transported by road on the back of a lorry, stacked for storage or transport in the hold of a cargo ship, barge or train. A container may be a side load container, typically having a curtain along one side of the container that may be opened to load the container from the side. A container may alternatively be an end load container with doors at an end of the container that may be opened. Typically end load containers have solid side walls and provide greater security than a side load container. Trailers are similar in that they transport goods, but a trailer includes a chassis and wheels and is typically towed on land behind a powerful tractor cab. Containers provide an advantage over trailers due to their lower weight and more compact size and are therefore most cost effective for transport by cargo ship, barge, rail and all forms of intermodal transport.

[0003] Since containers must be transported to and from a destination it is useful if they can be collapsed for the return journey so that they take up less room in the ship or other transporter. However, it is better if the containers can be used to transport goods back into the country. Containers are often specialised to the extent that they cannot be easily used to transport goods other than those for which the container is adapted and this limits the nature of the cargo that can be carried on a return journey. Typically, a country exporting lots of one type of product does not need to import an equal quantity of said product so it is desirable for a container to be able to transport other goods. It has been noted that cars are rarely transported in containers as car transporters are preferred for this task. Some specialised systems of dedicated ramps do exist, but these are generally cumbersome, time consuming to erect and dismantle and are generally unsatisfactory.

[0004] It is an object of the present invention to provide a container that addresses some of the above issues.

[0005] According to the invention there is provided a freight container having corrugated side walls, end walls, a floor, a roof, doors in one end wall and means for supporting cars inside the container, the car supporting means comprising load carrying columns associated with respective corrugations of the side walls and a plurality of trays each for receiving either the front or the rear wheels of a car, wherein the trays have latching means adapted to latch the trays to load carrying columns on opposite sides of the container at any one of a range of possible latching positions at different heights on the columns.

[0006] By providing such a freight container it is possible for cars supported by the trays to be arranged in a stacked formation with one car located above another. This arrangement increases the number of cars that may be transported in the container and reduces unused space within the container. Such a container can be used to transport standard cargo in one direction and cars in the other so that it is loaded on both journeys and is more cost effective for the container owner. By having each car supported by two trays, the front wheels supported by a first tray and the rear wheels supported by a second tray, the angle at which the car is stored can be readily altered so that the stacking height of two cars can be reduced. The roof of a vehicle below can be located in the space between the two trays supporting a vehicle above resulting in a reduction in overall height of the stack. This enables transport of stacked cars in a container of substantially standard height for road transport within Europe.

[0007] The walls of the container are corrugated having inwardly and outwardly projecting portions. The corrugations preferably comprise substantially planar corrugation sections such that the container wall comprises a plurality of inner and outer corrugation sections separated from one another by side corrugation sections. Preferably the container walls are box corrugated such that the angles between the side corrugation sections and the inner and outer corrugation sections are substantially 90°, although other angles may be used. A corrugated profile increases the strength of the walls and their resistance to outward bowing. It should be understood that the corrugations need not be regular, or comprise substantially planar sections.

[0008] A freight container is just an enclosed space in which goods can be stored for transit. It is important that any fixings inside the container which are present for the purpose of securing goods in transit should not intrude into the useable interior space of the container. The useable interior of the container is typically defined by the length of the container interior, the distance between the innermost portions of the corrugations of the sidewalls and the height of the container from the floor to the lowest point of crossbeams which support a roof and also form part of the framework for the container. In the case of the present invention, the load-carrying columns are associated with a corrugation. In most cases, the columns will not intrude at all into the useable interior of the container, but if the columns are formed by welding a plate across a corrugation, there may be a minimal intrusion into that space, by the thickness of the plate. This arrangement within the container maximises the space available for the cars and also for cargo. The columns could also be formed by reinforcing the outside of the container wall. This may be achieved by substantially enclosing one or more of the outside corrugations, but is preferably an additional plate attached to the outside of the container wall to form a "double skin" rein-

forced region to which the latching means can attach from the inside of the container.

[0009] The load carrying columns preferably comprise additional members attached, by welding or otherwise, to the corrugated walls of the container to increase the resistance of the wall to outward bowing and to provide a suitably strong location for the mounting means. The load carrying columns are preferably located along the container where it is anticipated the wheels of each car will be located during transit. This enables the container to be strong where the strength is required and to avoid adding the extra weight of the columns where the additional strength is not required. It is preferred that the load carrying columns extend to the floor as this allows the transfer of loading forces from the columns to the floor. This enables the container to support heavy loads from the walls.

[0010] The columns may be formed by welding a plate across a corrugation so that the column is formed in part by the plate and in part by the walls of the corrugation where they are spaced apart from the plate. The range of positions at which the trays can be latched to the column can be provided by formations (eg holes) on/in the plate.

[0011] The columns may comprise a 'U' shaped metal section adapted to fit between the side corrugation sections, but may be of other cross-sections. Each leg of the 'U' may be located adjacent a side corrugation section and the back of the 'U' being substantially in the same plane as the inner corrugation sections as this provides additional resistance to outward bowing of the container walls. There may be a further reinforcing member located adjacent the outer corrugation to provide additional strengthening for the side walls. It is preferred that each leg of the 'U' is substantially the same length as the side corrugation section, but it may have other lengths so the 'U' shaped reinforcement does not reach the outer corrugation section, or the back of the 'U' is not in substantially the same plane as the inner corrugation sections. The range of positions at which the trays can be latched to the column can be provided by formations (eg holes) on/in the base of the U-section.

[0012] The columns may not extend fully from the floor to the roof of the container. Preferably the column extends only to the maximum height at which a tray may be secured when supporting a car. This reduces the weight of the reinforcing within the container.

[0013] Still further, the columns may be formed as separate columns which can be positioned temporarily in the corrugations, without relying on the corrugated walls for any part of the column strength. Such columns can be placed in appropriate corrugations when cars are to be carried in the container, being held in position by the trays which extend from side to side of the container when latched to the columns, and can be easily removed when the container is used for other cargo. Such columns may also form part of a framework which includes a cross brace at an upper end to hold the columns in position before the trays are located. The columns may be secured at a lower end by attachment to a lower lashing ring within the container, or other attachment means. Upper ends of columns located on opposite side of the container may be secured to one another by the cross brace. The cross brace allows forces to be transferred between columns which reduces the likelihood of inward movement of one or both of said columns. Such a framework may be permanently installed within a container, or may be removable so that the container is lighter for a standard cargo journey. The frameworks removed from several containers could then be shipped in a single container for the return journey.

[0014] The trays are preferably substantially the same width as the distance between the inner corrugation sections of the two walls of the container. In this way the tray may be more easily secured within the container. Preferably the tray is shaped such that there is a depression in which the wheels of a car may be located such that the wheels may not roll. The tray preferably includes lashing points to which straps may secured to secure the car in relation to the tray. One tray is used to support two wheels of a car, either the front wheels, or the rear wheels as this allows easier adjustment of the angle of the car within the container.

[0015] It should be understood that although the tray may comprise any means of supporting the two wheels of a car such as bars, frameworks or other structures. For example, the tray may comprise two bars secured a predetermined distance apart such that the wheels of a car may not fit between the bars, but the gap between the bars forms the depression in which the wheels of a car may be located such that the wheels may not roll as described above. The tray may comprise a frame slidably mounted on side bars that may be attached to the wall. This allows the relative distance between two trays to be adjusted to suit the wheelbase of a vehicle supported by the trays. The trays may also comprise means for allowing a wheel to be rolled into the frame without having to rise up and over a part of the tray, for example a portion of the wall of the trays could be temporarily moved or removed to allow a vehicle to drive into position above the trays before the wall was repositioned and the vehicle lifted on the tray. Such a feature also allows the trays to be positioned correctly relative to a stationary car without the need to raise the wheels of the car.

[0016] The wheels may be secured to the trays using any suitable lashing means, but it is currently preferred that a sleeve is located around the circumference of the wheel and a tether is secured to the tray and over the sleeve that surrounds the wheel. The tether is preferably coupled to the sleeve using loops or other fastening means so that the tether may slide through the loops, but not slip from the sleeve. This enables the wheels to be reliably secured to the trays and reduces any likelihood of cosmetic damage to the wheels or car by any tether or lashing means through contact. This arrange-

ment also reduces the likelihood of structural damage to the car through forces applied to the wheel by the lashing means during transit.

[0017] The columns preferably comprise apertures with which the latching means of the trays may engage to secure the trays relative to the container. This is simple and low cost and helps to reduce the weight of the container.

[0018] The latching means on the trays preferably comprise sprung bolts attached to opposite sides of the tray. Sprung bolts are biased by spring means towards a predetermined position. This may be a position in which an engaging portion protrudes from the side of the tray and may be engaged with the columns. A user must retract the bolt into the tray until the tray has reached the desired position, at which time the user can release the bolt so it engages with the column. The latching means may further include releasable retaining means to retain the bolt in a retracted position until the user releases the bolt so that a user need not retain the bolt manually. The sprung bolt may also be biased towards a non-engaged position such that a user must force the bolt outwards from the tray to engage with the column.

[0019] It is preferred that the engagement between the latching means and the columns is secure. It is further preferred that the columns include apertures which engage with the latching means. The apertures may be non-circular, for example substantially 'T' shaped, and the head of the sprung bolt forming the latching means may include a securing portion. The securing portion is shaped so that it can be passed through the non-circular aperture and rotated so that it cannot be removed from the hole without further rotation. It is further preferred that the securing portion is prevented from passing further into the aperture by a blocking piece that remains outside the aperture. In this way a portion of the reinforced region is located between a portion of the latching means as this enables a more secure connection between the tray and container. By securing the trays to the columns in this way the tray acts to couple the sides of the container together and this further reinforces the structure. A 'T' shape for the aperture is preferred as containers are continually subjected to bumps and scrapes which may deform the walls of the container and/or the columns. Such deformation may render some aperture shapes, such as substantially circular apertures, difficult or impossible to use. However, a 'T' shape provides an aperture that provides a greater tolerance for accommodating such deformations in the container wall whilst still remaining useable for engaging with the latching means.

[0020] The trays may further comprise storage attachment means by which the tray can be secured in a location within the container, preferably the roof space, for storage on a return journey. This storage attachment means may be an additional bolt that can be engaged with a lashing ring near the roof of the container. The latching means could also form the storage attachment means enabling the locating means to be secured to mounting means in the desired location.

[0021] The container may further comprise lifting means which preferably comprise a plurality of heavy duty lifting rings located at or adjacent the roof of the container. It is preferred that the lifting rings are located substantially above columns due to the increased container wall strength. Cables may be passed through the lifting rings and an end of the cable attached to a tray. The opposite end of the cable may be secured to a winder mechanism that enables the cable to be wound in or out. To raise the tray, the cable is wound in by the winder such that cable is drawn through the lifting rings and the tray raised. The power source for the winder may be integral with the container, or may be external, for instance the power may be taken from the engine or compressed air system of a lorry on which the container may be mounted. The power source could be electric, hydraulic, compressed air, or even manual. Lifting means such as hydraulic or scissor jacks, fork lift trucks and the like could also be used to raise the trays into position.

[0022] The container preferably includes recessed channels set into the floor, such as those used in the Joloda™ loading system. Such channels allow moving apparatus to be positioned under pallets, paper reels, one shot loading apparatus or other items located on the floor of the container. The container preferably includes at least four channels in the floor, but may contain fewer or more channels as required.

[0023] The transport apparatus may also include moving apparatus adapted for use with a container including such channels. The moving apparatus may be located substantially within the channels with a top surface below the floor of the container. This allows the moving apparatus to be positioned below a pallet resting on the floor. The moving apparatus is preferably adapted such that a top surface may be raised above the floor to raise the pallet off the floor as this facilitates moving the pallet. Suitable apparatus is available for use with the Joloda™ system. Some loading bays also include such channels and this allows cargo to be loaded onto pallets outside a container, moving means inserted under the pallet and the pallet moved along the channels into the container.

[0024] The provision of such channels facilitates the loading of large or bulky cargos. Contact between the cargo and container may damage the container or the cargo and is likely to cause expensive cosmetic and/or structural damage to some cargos, for example cars. The channels ensure that the cargo travels along a predetermined path within the container thereby reducing the likelihood of contact between cargo and walls.

[0025] In a preferred embodiment lifting apparatus is arranged on moving means located within channels. Two trays are arranged on said lifting apparatus and a car is arranged on top of the trays so that the front wheels are on one tray and the rear wheels are on the

other tray. The car is then secured to the trays and the lifting apparatus and associated cargo is then moved along channels into the container. Once the container has reached the required location, the lifting apparatus is then used to raise the car and trays into an angled orientation with respect to the floor. The trays are then secured in position using the latching means and columns. This angled orientation may be reached in a single lifting operation with the lifting means raising one end of the car to a different height than the other end, or it may be in two or more stages. In an exemplary two stage operation the car may be lifted substantially level until a desired height for one end of the car is reached and the two trays secured to columns. The lifting means can then be moved so that they are only supporting one of the trays. The tray supported by the lifting means can be released from the reinforced regions and the height of the tray altered and the tray then secured at the new height. This will result in an angled orientation of the car within the container.

[0026] Accordingly the invention also provides a method of supporting cars in a freight container which has corrugated side walls, end walls, a floor, a roof and doors in one end wall, wherein the front wheels of a car to be transported in the container are located on a first tray extending from side to side of the container and the rear wheels are located on a second tray also extending from side to side of the container the trays are raised towards the roof of the container, with one of the trays being raised to a different height than the other, and the trays are latched at respective different heights to load-carrying columns located in the corrugated side walls, so that the car is supported at an angle to the floor of the container

[0027] The freight container preferably also includes a plurality of tie down points within the container. The tie down points may be rings attached to the wall to which a strap or other securing means may be attached to secure goods within the container relative to the container.

[0028] The freight container may also include one or more false floor panels. The or each false floor panels preferably comprise floor latching means on opposite sides thereof. The columns may further comprise floor mounting means with which floor latching means may be engaged to secure the false floor panels relative to the container such that a false floor, above the container floor can be created. It is preferred that the floor mounting means are the same as the means features with which the latching means of the trays engage and that the floor latching means and the tray latching means are the same as this means that the false floor panels can be mounted in the same way as the trays.

[0029] The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of a freight container;

Figure 2 shows a view of an inside of a freight container wall including a load carrying column;

Figure 3 shows a tray for supporting two wheels of a car;

Figure 4 shows a schematic view within a container;

Figure 5 shows a perspective end view of a container having channels in the floor and also a false floor within the container;

Figure 6 shows a different embodiment of a tray for supporting two wheels of a car;

Figure 7 shows a detailed view of one end of the tray of Figure 6;

Figure 8 shows a detailed view of the spring loaded bolts of Figure 6;

Figure 9 shows a cross section of the container of Figure 1 during a loading operation; and

Figure 10 shows a cross section through different load carrying columns.

[0030] Figure 1 shows a perspective view of a freight container 1. The freight container includes side walls 2,4 a floor 6 and a roof 8. At an end 10 of the container there are doors 12 which may be opened to allow end loading of the freight container 1.

[0031] The freight container 1 includes handling points 14 to allow the container 1 to be lifted by standard lifting machinery that may be used on docks or other loading areas.

[0032] Figure 2 show a portion of the inside of the side wall 4. The wall is corrugated, having a plurality of inner corrugation sections 16 and outer corrugation sections 18 connected by side corrugation sections 20. In this case the angles between the side corrugation sections 20 and the inner 16 and outer 18 corrugation sections is substantially 90°. Tie down rings 42 are provided at a lower portion of the wall to allow cargo to be secured relative to the container 1.

[0033] The wall includes a load carrying column 22. The column 22 comprises a 'U' shaped metal section 24 adapted to fit between the side corrugation sections 20. Each leg 26 of the 'U' being located adjacent a side corrugation section 20 and the back 28 of the 'U' being substantially in the same plane as the inner corrugation sections 16.

[0034] The column 22 includes a plurality of mounting apertures 30 located along its length. A heavy duty lifting ring 32 is located near a top of the column 22. The lifting ring is secured to both the container wall 4 and the col-

umn 22. A cable 48 passes through the lifting ring 32 and passes to a winder mechanism 50 allowing the cable 48 to be extended or retracted. Although the winder 50 is shown as offset in this figure, it should be understood that the winder may be located directly below the heavy duty lifting ring 32 to achieve a vertical pull.

[0035] Figure 3 shows a tray 34 suitable for lifting two wheels of a car (not shown in this figure). The tray 34 comprises a depression 36 into which the wheels of the car may be located. The tray 34 includes lifting points 38 which may also be used as tie down points to secure the car relative to the tray 34. Spring loaded bolts 40 are provided on opposing sides of the tray 34 to allow the tray to be secured to the columns 22.

[0036] Figure 4 shows a schematic view within a container 1 which is loaded with cars 44,46. There are three cars 44 located on the floor 6 of the container 1 and there are three cars 46 suspended above those. Each of the suspended cars 46 is supported by two trays 34, one tray 34 supporting front wheels and another tray 34 supporting rear wheels. The cars are loaded into the container through the doors 12.

[0037] The trays are supported by cables 48 that pass through the heavy duty lifting rings 32 and then pass to a winder mechanism 50. It should be noted that longer cars may be transported in such a container, but only four at a time, two on the floor and two suspended. There may be additional heavy duty rings and reinforced regions along the walls in location likely to correspond to the positions of the wheels of cars being transported.

[0038] Figure 5 shows a perspective end view of a container 1. The floor 6 of the container 1 includes recessed channels 52 that run the length of the container 1. The channels 52 are recessed below a level 58 of the floor 6. Moving means 56 are located in the channels 52. The moving means have a movable top surface 56 that may be positioned below the level 58 of the floor 6 such that the moving means may slide along the channel 52 under a pallet on the floor 6. The movable top surface 56 is then raised above the level 58 of the floor so that the pallet is raised of the floor 6 and may be moved more easily. Although Figure 5 shows only 3 tracks, it should be understood that there are preferably four tracks and that there may be more than four tracks.

[0039] Figure 5 also shows a false floor 60 mounted within the container 1. The false floor 60 comprises false floor panels 62, each having spring loaded locating bolts 64 that can engage with the columns 22. The false floor can be extended for the entire length of the container, or for only part of the length as required.

[0040] Figure 6 shows a different embodiment of a tray 134. The tray 134 comprises a frame 70 which is slidably mounted on side arms 72. The side arms include spring loaded bolts 40 for attaching the tray 134 to the reinforced regions 22. Lashing rings 38 are located on the frame 70 to secure a car supported on the tray 134 to the tray 134.

[0041] The frame 70 includes movable sections 74 which can be moved to allow a wheel of a car to be positioned in the frame 70 without the car having to drive over any portion of the frame 70. These movable sections will be described in more detail with reference to Figure 7.

[0042] Figure 7 shows a detailed view of an end of the tray 134 in Figure 6. The frame 70 is slidably mounted on side arms 72 by brackets 78 that allow the frame to slide along the side arm 72. The movable section 74 is arranged to form part of the frame 70, but is sized so that it can slide into the frame 70 so as to leave a gap 76 in the frame 70 through which a wheel (not shown) may pass. The movable section would be slid into the frame so that a wheel can be located over the frame and the movable section 74 then returned to its original position so as to form part of the frame 70 upon which the wheel will rest. The tray 134 can then raised and the side arms 72 secured to the reinforced portions 22 to support a car on the tray 134. The side arms 72 can be secured and the frame can then slide along the side arms 72 so that vehicles with different wheelbases can be transported. Figure 7 also shows the 'T' shaped apertures 30 in the column 22 with which the bolt 40 engages.

[0043] Figure 8 shows a detailed view of the spring loaded bolt 40. The spring loaded bolt comprises a body member 80, a handle 82 at one end of the body member 80 and engaging means 84 at the opposite end for engaging the reinforced region 22. The body member 80 passes through guiding means 86 within the side arm 72 and a spring 88 biases the locking bolt 40 to a first position.

[0044] The engaging means 84 includes a portion 83 that does not pass through the aperture 30 and portion 85 that does pass through the aperture 30. In this way a portion of the columns 22 is trapped between portions of the engaging means resulting in a more secure engagement between the latching means 40 and the column 22.

[0045] Figure 9 shows a cross section of the container 1 of Figure 4 during a loading operation. Two cars 46,44 are already in place stacked one on top of the other and supported by trays 34. The cars are secured to the trays 34 by tethers (not shown). In this figure a pallet 90 is located on moving means 56 which are arranged in channels 52. The pallet 90 includes a scissor jack 92 which is supporting a car 46 in an intermediate raised position in which one end of the car (in this case the front) is at the desired height. The trays are secured to the columns 22 and the pallet moved so that the scissor jack 92 can raise the other end of the car (in this case the rear). The scissor jack 92 is used to support the other end of the car and the tray at that end is released from the columns 22. The tray is then raised to the desired height for that end of the car and the tray 34 secured to the columns 22 at the desired height. A lower car 44 can then be positioned below the car that is now secured at an angle to the floor. At least a portion of the roof of the

lower car is typically located between the trays that support the upper car 46 as seen in this figure.

[0046] This figure also shows some of the roof cross-members 95 of the container 1. A tray 34 is shown in a storage position near the roof between the cross-members 95.

[0047] Figure 10 shows three different types of column 122,222,322 that are particularly suitable for use with the present invention.

[0048] The column 122 is formed by the welding of a plate 96 between adjacent inner corrugation portions 16. The corrugation itself 16,20,18,20,16 and the plate 96 then form the load carrying column which comprises the required formations (for example apertures) with which the latching means 40 engage.

[0049] The column 222 is formed by reinforcing the corrugation side and outer walls (20,18) with additional metal plate 98 and providing a 'U' shaped section 97 attached to that reinforcing. The legs of the 'U' shaped section 97 being attached to the reinforcing 98 so that a base of the 'U' shaped section 97 is available to comprise the required formations with which the latching means 40 engage.

[0050] Column 322 is formed by reinforcing the corrugation side walls 20 using the legs of a 'U' shaped section 99 with the base of the 'U' shaped section 99 is available to comprise the required formations with which the latching means 40 engage.

[0051] The invention has been described above by way of example only and it should be understood that modifications in detail may be made without departing from the scope of the invention defined in the claims.

Claims

1. A freight container having corrugated side walls, end walls, a floor, a roof, doors in one end wall and means for supporting cars inside the container, the car supporting means comprising load carrying columns associated with respective corrugations of the side walls and a plurality of trays each for receiving either the front or the rear wheels of a car, wherein the trays have latching means adapted to latch the trays to load carrying columns on opposite sides of the container at any one of a range of possible latching positions at different heights on the columns.

2. A freight container as claimed in claim 1, in which the load carrying columns include apertures with which the latching means may engage.

3. A freight container as claimed in claim 1 or claim 2, in which the load carrying columns are permanently attached to the container walls.

4. A freight container as claimed in any preceding claim, in which the latching means comprise spring loaded bolts which are biased to a predetermined position.

5. A freight container as claimed in any preceding claim, in which the container further comprises false floor panels comprising floor latching means on opposite sides thereof, the load bearing columns further comprising floor mounting means with which floor latching means can be engaged to secure the false floor panels relative to the container such that a false floor, above the container floor is created.

6. A freight container as claimed in any preceding claim, in which the floor of the container includes recessed channels substantially parallel with the walls of the container such that portions of the underside of a flat base of a pallet on said floor are accessible for moving apparatus.

7. A freight container as claimed in claim 6, the apparatus further including moving apparatus, said moving apparatus being adapted such that tines of the moving apparatus may be located substantially within the channels with a top surface of the tines below the floor of the container such that the tines may be positioned below a pallet resting on the floor, the tines being adapted such that top surface may be raised above the floor to raise the pallet off the floor.

8. A method of supporting cars in a freight container which has corrugated side walls, end walls, a floor, a roof and doors in one end wall, wherein the front wheels of a car to be transported in the container are located on a first tray extending from side to side of the container and the rear wheels are located on a second tray also extending from side to side of the container the trays are raised towards the roof of the container, with one of the trays being raised to a different height than the other, and the trays are latched at respective different heights to load-carrying columns located in the corrugated side walls, so that the car is supported at an angle to the floor of the container.

9. A method as claimed in claim 8, in which the raising the trays includes at least two raising stages, the first being raising the trays at substantially the same level and latching the trays to the load-carrying columns, then releasing one tray and altering the height of that tray before latching the tray to the load-carrying columns at a different height.

10. A freight container substantially as herein described with reference to, or as shown in, the accompanying drawings.

11. A method of supporting cars in a freight container substantially as herein described with reference to the accompanying drawings.

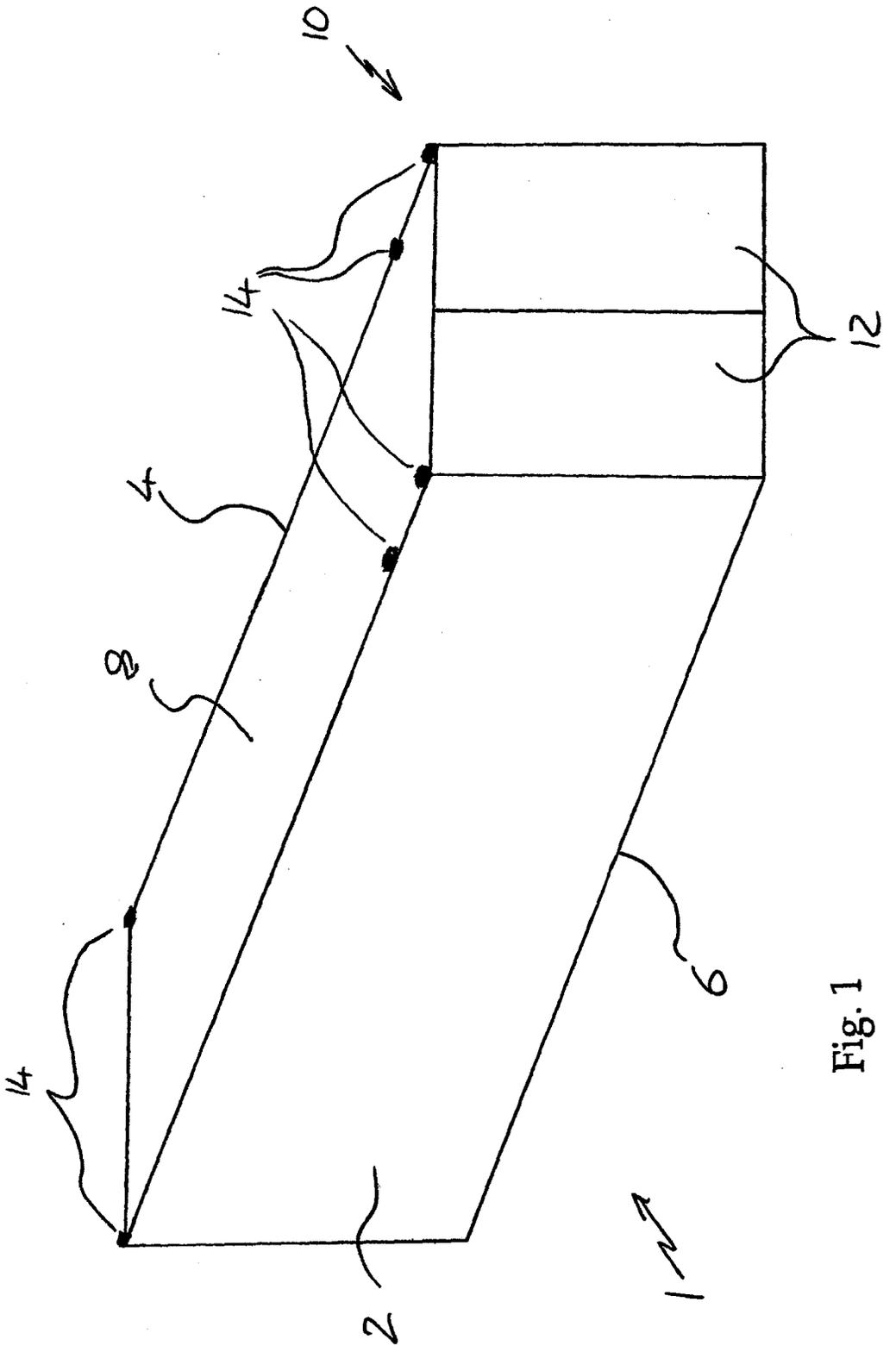

Fig. 1

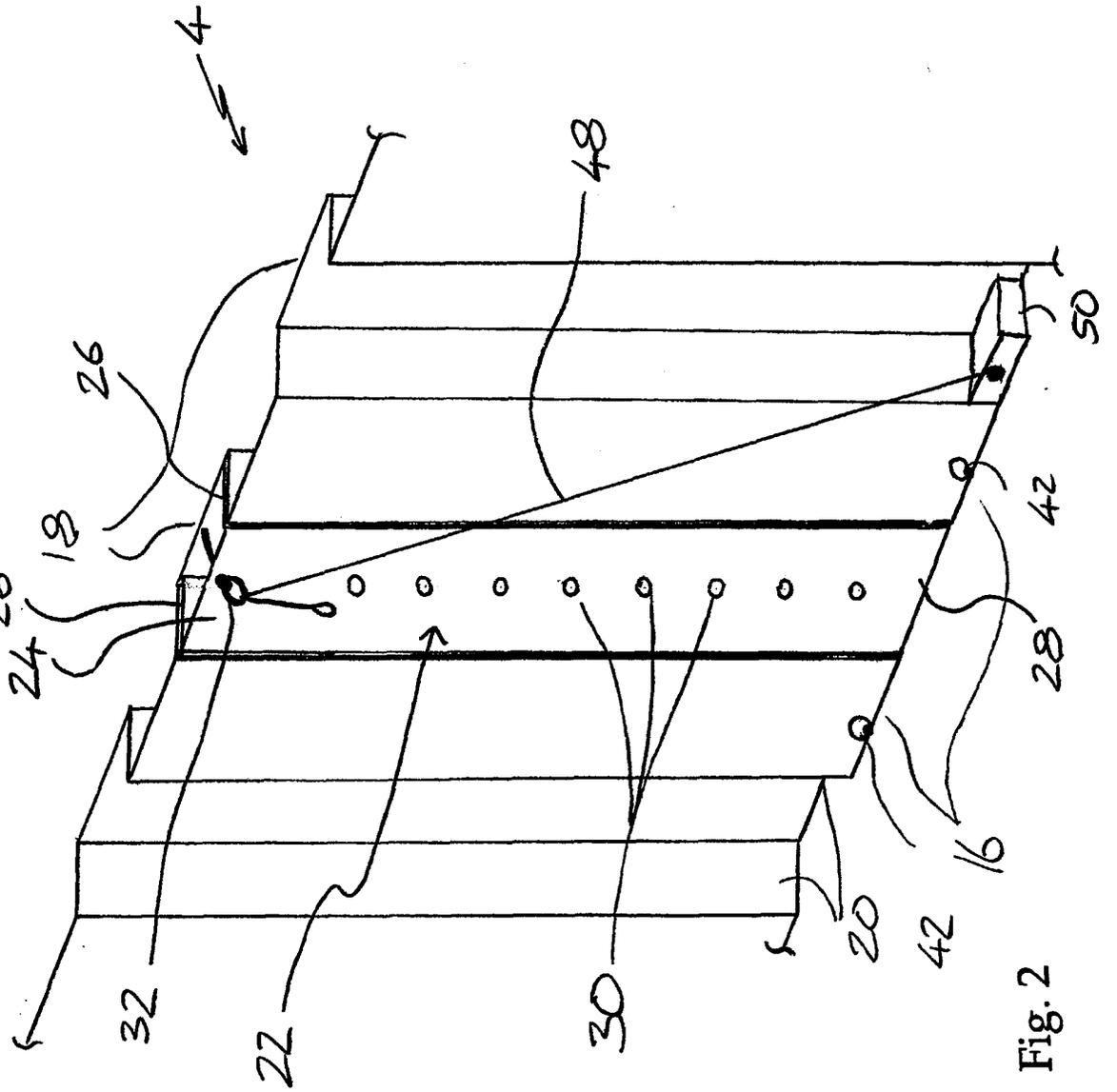

Fig. 2

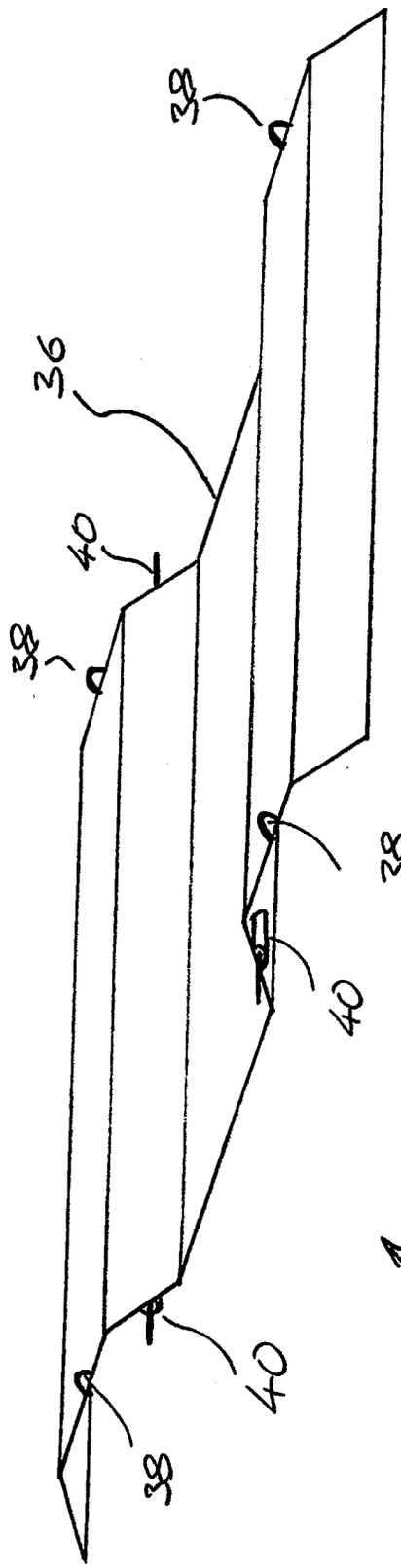

Fig. 3

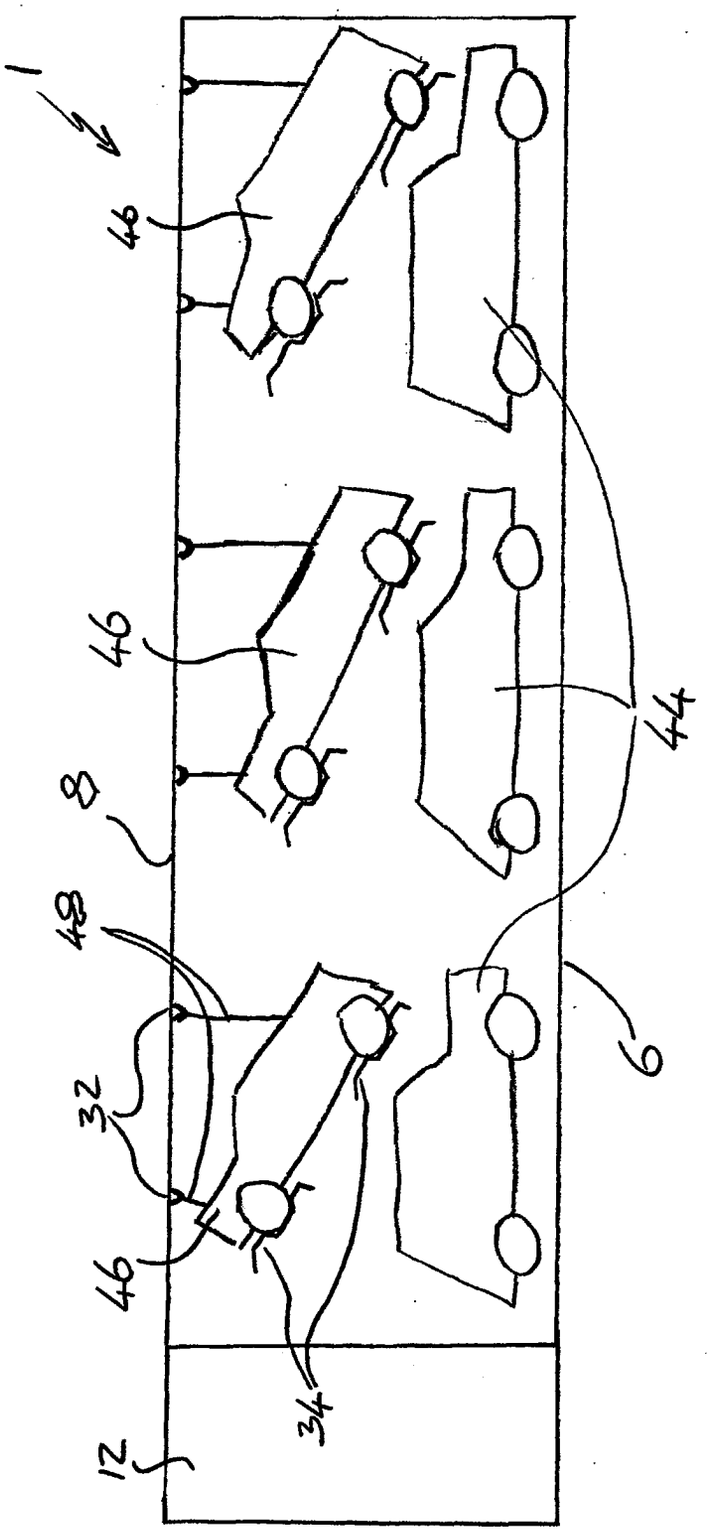

Fig. 4

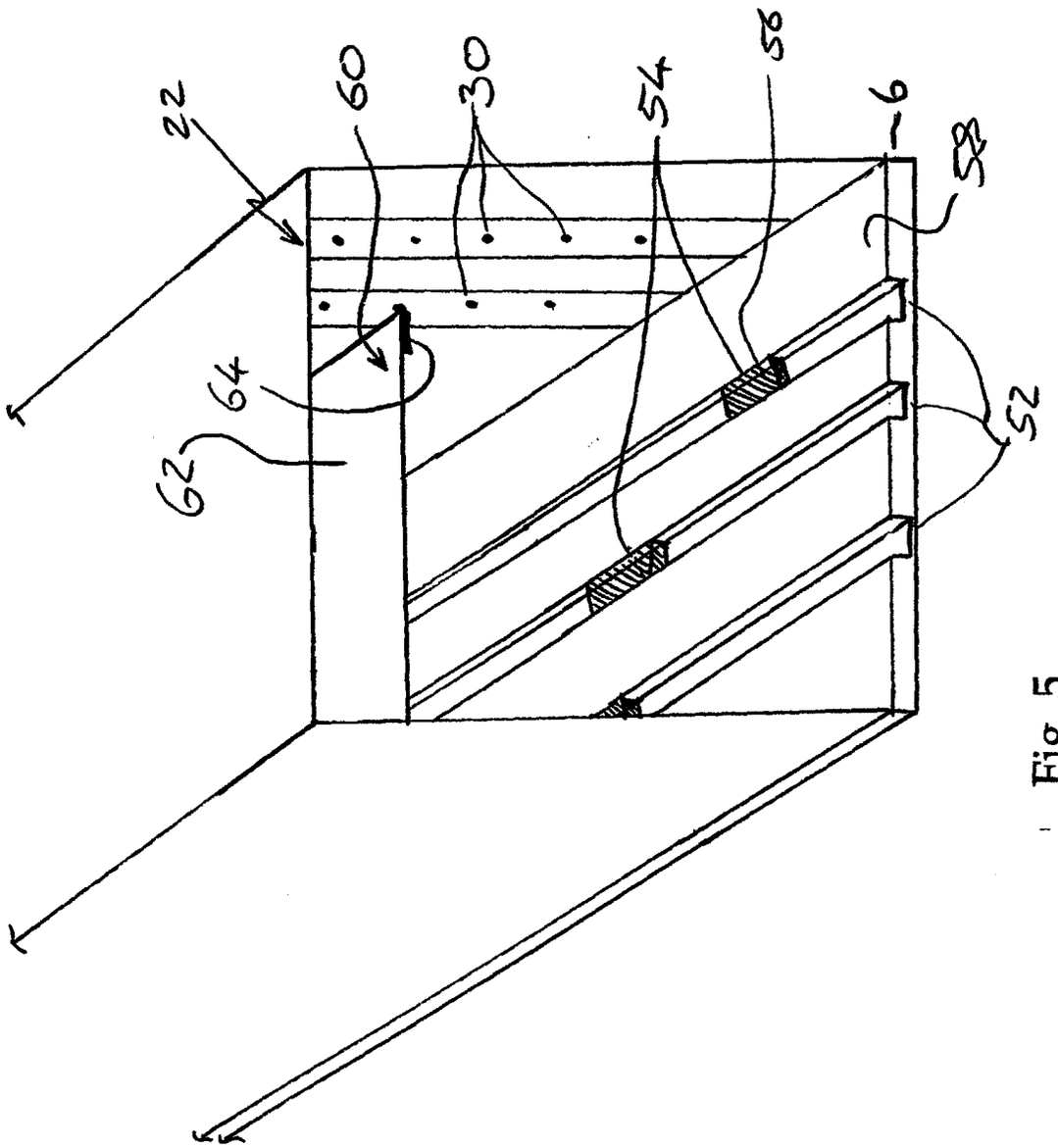

Fig. 5

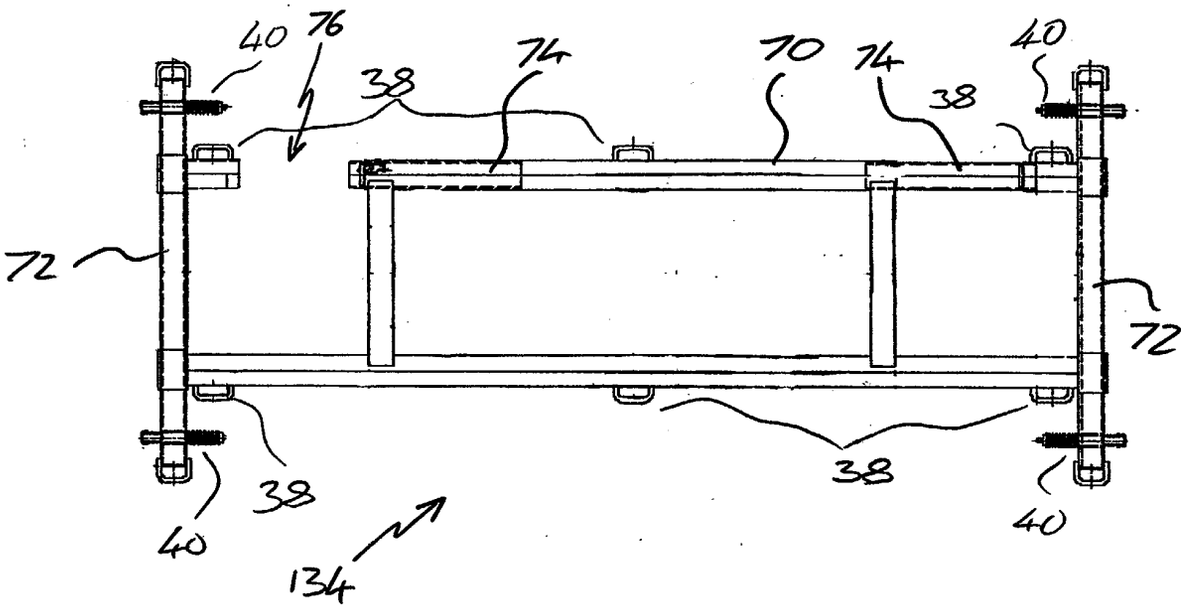

Fig. 6

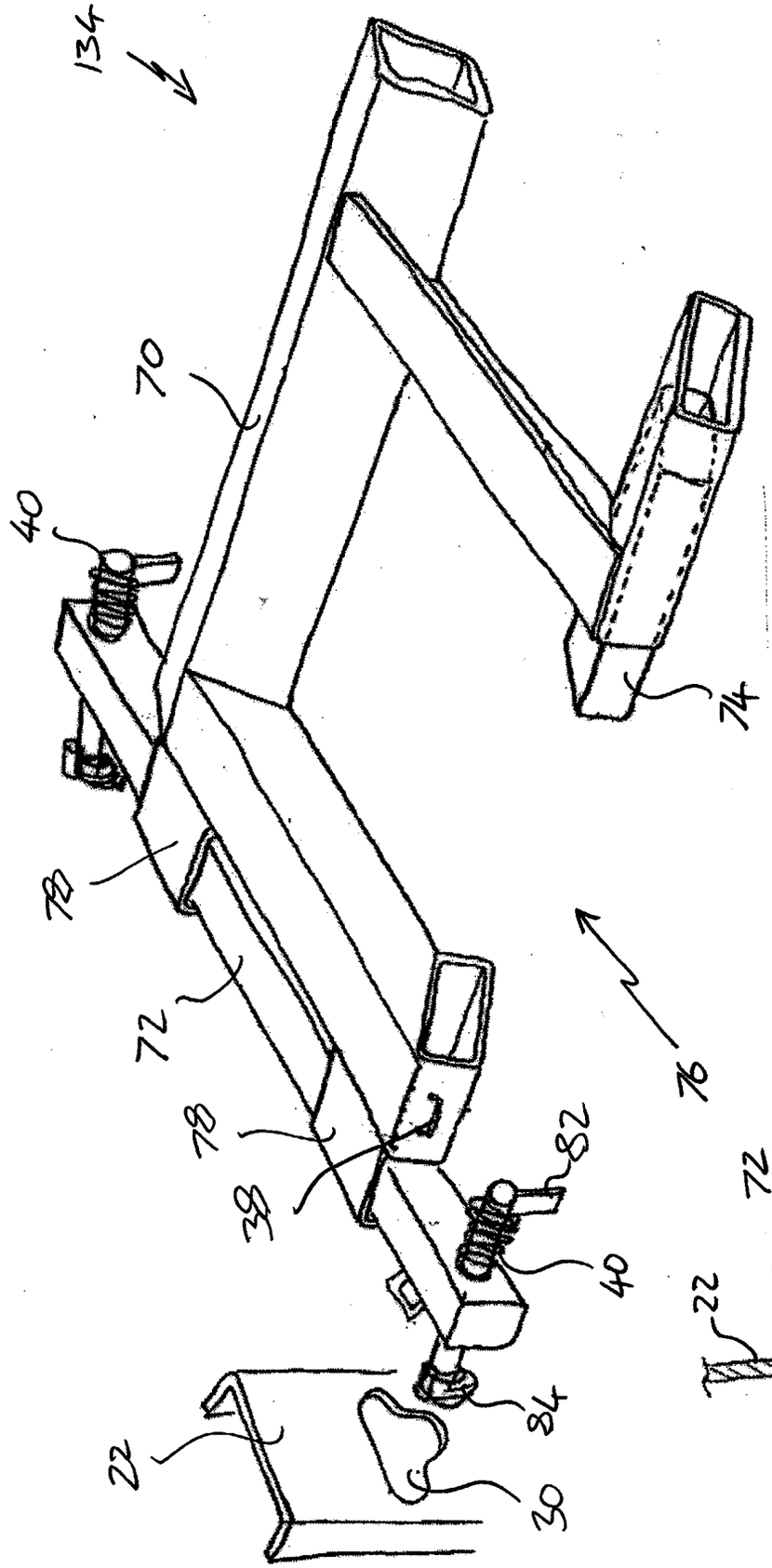

Fig. 7

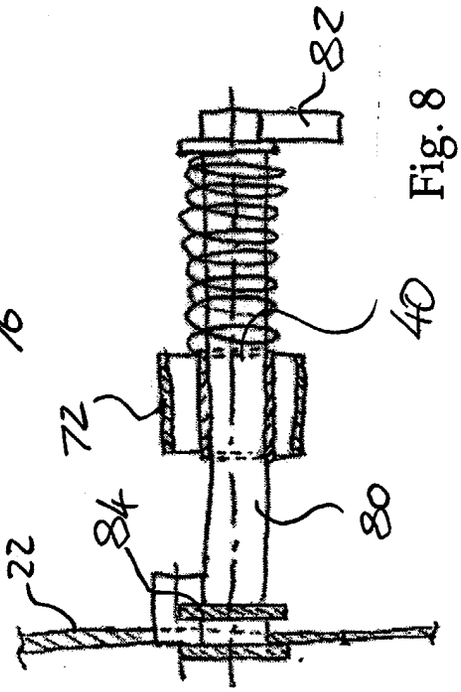

Fig. 8

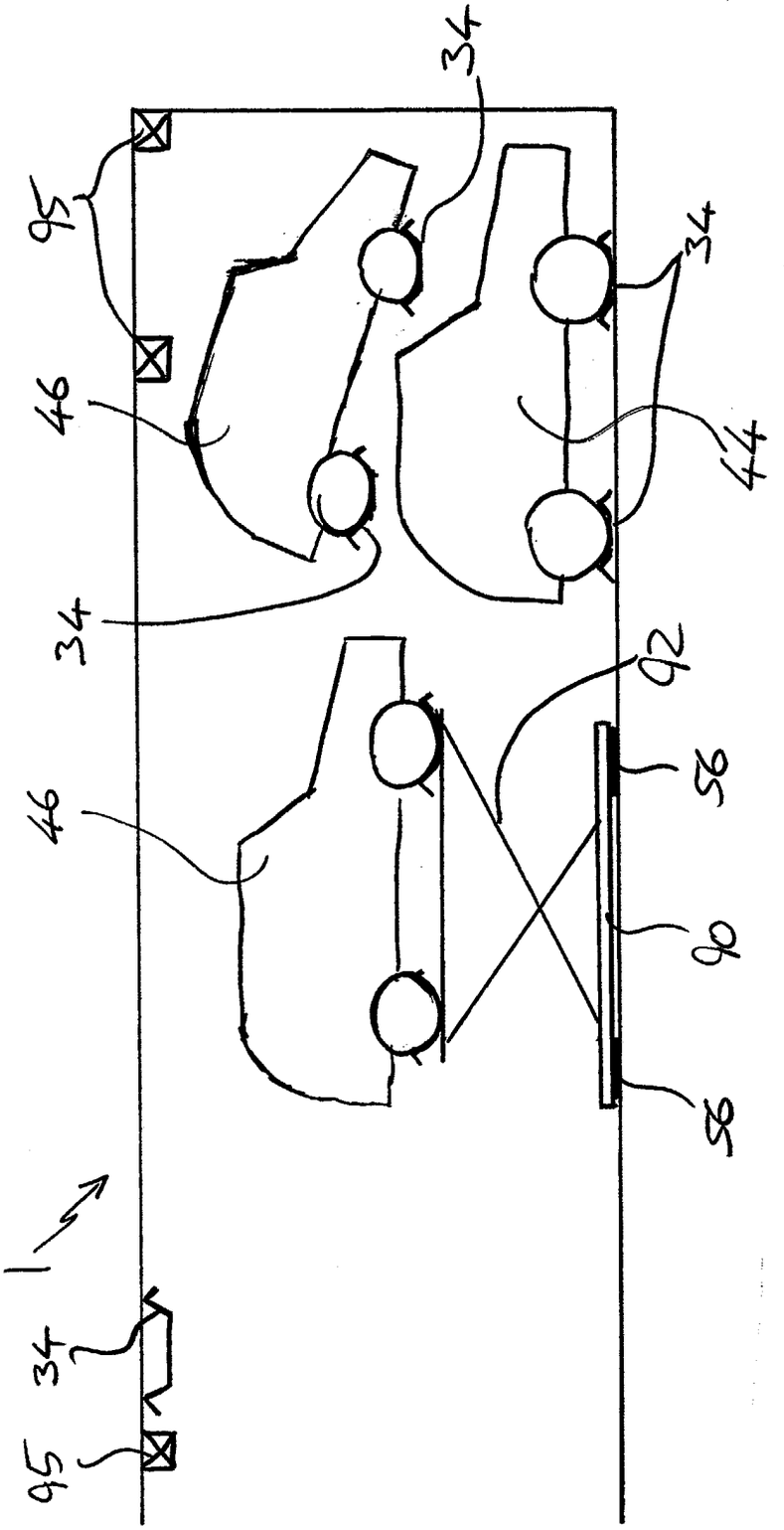

Fig. 9

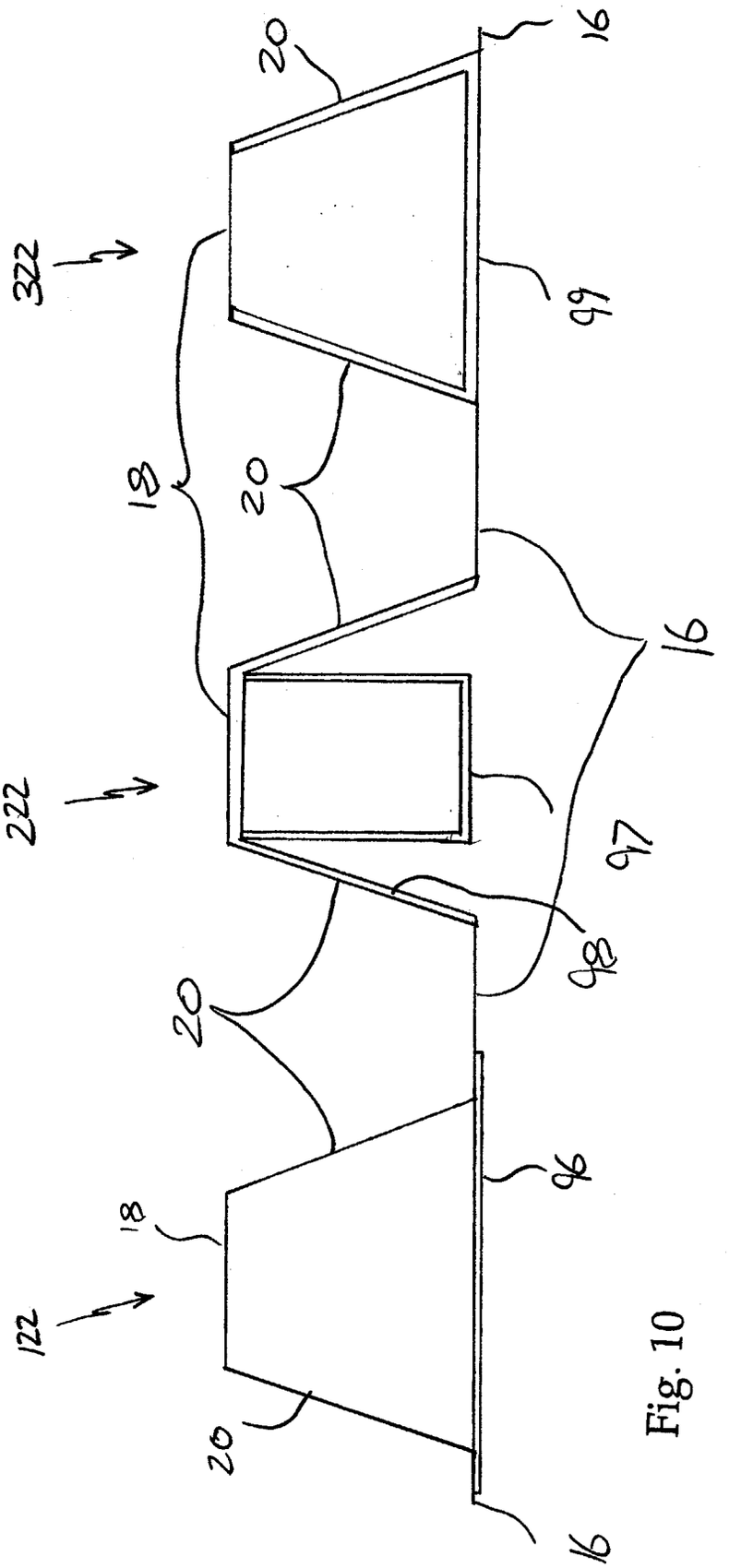

Fig. 10