

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 017 602 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

23.10.2002 Bulletin 2002/43

(51) Int Cl.7: **B65D 88/12**, B65D 90/14,
B65D 90/18

(21) Application number: **98940764.8**

(86) International application number:
PCT/SE98/01534

(22) Date of filing: **28.08.1998**

(87) International publication number:
WO 99/011544 (11.03.1999 Gazette 1999/10)

(54) **DEVICE AT A LOAD CARRIER**

EINRICHTUNG AN LASTENTRÄGERN

DISPOSITIF DE PORTE-CHARGE

(84) Designated Contracting States:

**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

Designated Extension States:

LT LV RO

(72) Inventors:

- **Jäderberg, Sven**
531 21 Falköping (SE)
- **Biegalski, Kevin**
415 06 Göteborg (SE)

(30) Priority: **29.08.1997 SE 9703108**

(74) Representative: **Cederbom, Hans Erik August**
Cegumark AB,
Box 53047
400 14 Göteborg (SE)

(43) Date of publication of application:
12.07.2000 Bulletin 2000/28

(73) Proprietors:

- **Jäderberg, Sven**
531 21 Falköping (SE)
- **Biegalski, Kevin**
415 06 Göteborg (SE)

(56) References cited:

EP-A1- 0 395 518 **DE-A1- 3 124 607**
DE-A1- 4 338 158 **SE-B- 466 593**
US-A- 5 368 179

EP 1 017 602 B1

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to an arrangement for a load carrier in the form of a platform module so arranged as to be capable of being handled without restriction between transport positions, rail, road vehicle and boat, and which, on its under side, exhibits a number of legs for setting up the load carrier on a base and the legs are mounted so that they are capable of pivoting in internal spaces in the load carrier respectively between a retracted and an extended position.

[0002] Intermodality has increasingly become a fashionable word, often with the admixture of multimodality, which are different ways of tackling transport solutions.

[0003] To achieve intermodality, it is necessary for the different means of transport to harmonize with one another; i.e. it must be possible to transfer loads from one form of transport to another by rapid and simple handling. This calls for load carriers that are adapted to the method of handling in question, such as from road vehicle to rail, and from rail to "Lift on - Lift off vessels" and "Roll on - Roll off vessels"; i.e. Lo-Lo vessels and Ro-Ro vessels respectively.

[0004] Containers are still the most flexible unit to this day, although they cannot be handled for Ro-Ro without extra equipment.

[0005] Previously disclosed through DE, A1, 3 124 607, for example, is a vessel load arrangement comprising a load frame capable of being accommodated on a desired transport vehicle, for example a boat or road vehicle, etc. A special ground support is required for the load frame when it is placed on the ground.

[0006] Also previously disclosed from SE-B, 466593 is an interchangeable platform with simple collapsible legs, although this is a unit intended for road vehicles rather than a load carrier for marine use and accordingly cannot be handled in the manner described above.

[0007] US, A, 5,368,179 also describes load carriers with pivoting legs, although these are complicated in terms of both their construction and their use.

[0008] The principal object of the present invention is thus, in the first instance, to make available an arrangement which solves the problem associated with the unrestricted handling of a load carrier equipped with legs in different situations and on different occasions.

[0009] Said object is achieved by means of an arrangement in accordance with the present invention, which is characterized by the features of the characterizing portion of claim 1.

[0010] The principal object of the invention is thus to make available an arrangement for a load carrier which exhibits pivoting legs to permit rapid handling of the load carriers between land transport means and vessels, and to minimize or entirely eliminate the presence of personnel for the actual handling operation in conjunction with extending the legs.

[0011] This is made possible as follows:

A) Manual operation of the locking device. To extend the legs, the locking device is released when the load unit is still on the incoming vehicle with the legs in the retracted position. As the load unit is lifted from the vehicle, the legs drop down and are locked automatically in the extended position. To retract the legs, the locking device is released when the unit (loaded or empty) is standing in position ready for lifting onto the incoming vehicle. The unit is raised from the ground and is then lowered back onto the ground, when the legs will move apart (this is facilitated by the inclination of the legs) and up against the underside of the load unit, where they will be locked in the retracted position. The unit is then lifted and placed on the incoming vehicle.

B) The locking device can also be released automatically by means of pins on the lifting yoke, which actuate a spring-assisted beam that actuates the actuating rod. No manual intervention, as described above, is required in this case.

[0012] The aforementioned operations are possible because the leg construction, the actuating rod and the locking construction are an integrated system and should be regarded as a unit. This can be appreciated from the new Claims.

[0013] The prior art, which can be appreciated from US, A, 5,368,179, comprises legs in a container which are pivotally mounted with horizontal bearing shafts contained in horizontal bearing tubes on the underside and the outside respectively of the container.

[0014] In the extended position, the legs are retained by pivoting struts which can be attached to the legs via removable pins in the attachment eyes of the legs.

[0015] The pivoting effect of said legs is made possible by removing the pin, pivoting up the strut and pivoting the leg upwards, and then sliding the leg into a storage cavity beneath the container. This requires a number of manual operations in order to be able to release and lock said legs when lifting and lowering. In order to avoid having to place dangerous catches underneath the container, it was necessary in this case to store the legs so that they were capable of sliding laterally to permit access to everything from the sides of the container.

[0016] The present invention as defined in the Claims thus differs significantly from the previously disclosed arrangement described above, and what is contained in the aforementioned Claims cannot be regarded as obvious to a person skilled in the art.

[0017] The invention is described below as preferred illustrative embodiments, in conjunction with which reference is made to the accompanying drawings, in which:

Fig. 1 shows a perspective view of a load carrier in accordance with the invention obliquely from above, showing the supporting legs retracted;

Fig. 2 shows details of the supporting legs and their actuating parts;

Fig. 3 shows the arrangement of the supporting legs in even more detail and their locking device in a locked position;

Fig. 4 shows the load carrier with all the supporting legs arranged in the extended position;

Fig. 5 shows pairs of supporting legs in extended supporting positions;

Fig. 6 shows a supporting leg in the extended position and its locking device in the free position;

Fig. 7 shows a variant of the invention incorporating an automatic locking mechanism;

Fig. 8 shows an example of the application of the invention to a container;

Fig. 9 shows an example of stackability;

Fig. 10 shows an adaptation for Ro-Ro handling;

Fig. 11 shows a schematic representation of handling the invention; and

Fig. 12 shows a pictorial representation of handling the invention.

[0018] A load carrier 1 is so arranged as to be capable of being handled without restriction between transport positions, rail, road vehicle and boat, and is intended for both Lo-Lo and Ro-Ro handling. In accordance with the invention, a load carrier 1 of this kind, which exhibits on its underside 2 a number of legs 3 to enable the load carrier 1 in question to be set up on a base 4 once the load carrier 1 has been lifted down from a road vehicle, for example, and is to undergo further handling with existing terminal equipment, such as an ordinary or platform/cassette type of previously disclosed container module, is equipped with a novel leg arrangement.

[0019] The innovation is that the legs 3 are pivotally mounted inside an inner space 5 in the load carrier 1 and as such are capable of pivoting up 6 and down 7 between a retracted position I and an extended position II, whereby the load carrier 1 can have different functions partly as a cassette and partly as an ordinary, previously disclosed so-called container platform.

[0020] A locking device 8 is also so arranged in the first place as to prevent unintentional retraction, but naturally also unintentional extension, of the legs 3 in question, and as to lock the legs 3 in the retracted position I or the extended position II.

[0021] The load carrier 1, which is preferably based on a 40-foot, so-called platform module with a gross weight of preferably ca. 50 tonnes, or a container of a previously disclosed kind with corner box arrangements welded in position for its adaptation to Lo-Lo loading in cellular vessels, must, for the purpose of Ro-Ro handling, see Fig. 8, have the supporting legs 3 extended downwards so that a so-called "lift trailer" can gain access beneath the container and then use its hydraulic system to lift the cassette and transport it to the intended location in accordance with Fig. 10. In another case, the unit functions as a platform or container and is handled

with the same equipment as a container. The invention thus permits transport costs to be significantly reduced, the quality of the transport to be improved, and the transport times to be shortened, and permits the just-in-time principle to be introduced in the transport organization as a whole. The invention also permits optimization of the total costs and the customer's costs. Last, yet no less important, is the fact that the invention permits environmentally friendly transport.

[0022] It may be mentioned in detail that the respective legs 3 are preferably formed from pairs of support beams 3¹, 3², which are interconnected in such a way as to pivot together as a common unit about their respective pivot shafts 9, 10 on the load carrier 1. The support beams 3¹, 3² are preferably arranged in parallel with one another, and a rigid foot beam 11 is connected to the outer free end 3^{1A}, 3^{2A} of the respective support beam via a pivot shaft 12, 13, in order to function on the one hand as a connecting link between the support beams 3¹, 3², and to function on the other hand as a support, resembling a large foot, on the ground.

[0023] One of the support beams 3¹ is pivotally attached to an actuating rod 14, via an articulated link 15, in conjunction with which one part 14A of said actuating rod 14 is capable of being accommodated in a slotted recess 16 in one of said support beams 3¹, which recess is arranged on one edge 17 of the long side of the support beam. The function of said actuating rod 14 is to act on the one hand as a blocking device for the support beams 3¹, 3² in the two said positions I, II, and on the other hand as a movement transmission device between an actuation mechanism 18 in said locking device 8 to permit adjustment of the support beams 3¹, 3² in the desired position I, II.

[0024] At its end 14B facing away from the support beam 3¹, the actuating rod 14 exhibits a manually actuated locking catch 19, which, among other things, incorporates a spring-assisted locking arm 20. Said locking arm is pivotally mounted about a pivot shaft in the load carrier 1 and is attached to the actuating rod 14. Said attachment includes a pin 21 projecting laterally in proportion to the actuating rod 14, which pin is capable of being accommodated in such a way that it is capable of being displaced freely in a slotted groove 22 in said locking arm 20.

[0025] A leg arrangement 3A-3D, which is arranged at the respective corner parts 1A-1D of the platform module 1 in matching recesses 5 in the platform module 1, has one pair 1C-1D of leg arrangements at the rear end B provided with subjacent rolling devices 23, such as wheels, rollers, rolling hoops or balls, etc., to permit the platform module 1 to roll on a base after the opposite end A of the platform module 1 has been raised.

[0026] The different parts of the invention can function as follows, described in greater detail:

[0027] The support beams 3¹, 3², which are pivotable between a horizontal and a vertical position I, II, and are each capable of being accommodated in an individual

space 5 in the load carrier 1, are so arranged as to be prevented from being extended or retracted unintentionally, thanks to the locking device 8. For this purpose, a pin 24 is arranged on the load carrier 1 to prevent the legs 3 from being extended unintentionally. A lever 25, which is attached to the outer free end 20A of the locking arm 20, can be adjusted manually to a desired position, which is determined by the position of the pin 24, which causes the legs 3 to be retracted, or to a pin 26 situated at a further distance from said first pin 24, and extension of the legs 3 is achieved with the lever in this position. In conjunction with this, the position of the shaft 21 is controlled by the groove 22 in the arm 20 and a slotted groove 27 provided to a desired extent in the frame 40 of the load carrier 1.

[0028] Blocking of the legs 3 in the retracted position I is determined by the position that a laterally projecting pin 28 in the actuating rod 14 adopts in said groove 27. Releasing the legs 3, i.e. unblocking, takes place by positioning the lever 25 above the stop pin 24. In this way, the shaft 21 causes the pin 28 to be forced upwards. During the lifting phase of the load carrier 1, for example by means of a truck or some other lifting device, the legs 3 are extended and the pin 28 is displaced in the groove 27 in the direction of the arrow 29. The torsion spring 30 of the locking mechanism pushes the shaft 21 towards the pin 28. In the course of setting down the load carrier 1 on the ground 4, the pin 28 is placed in its upper position in the groove 27 in an angled accommodating part 27A of the groove 27.

[0029] To achieve retraction of the support leg 3 from the supporting position II for the legs 3 shown in Fig. 4, the support legs 3 are unblocked by manual adjustment of the position of the arm 20. In the course of lifting the load carrier 1, the actuating rod 14 is moved downwards by its own weight and, when setting down the load carrier 1 on the ground 4, the pin 28 is moved in the direction 31 of the arrow in order to be accommodated in one of two matching milled and angled step 32, 33 in the groove 27. A tension spring 34 attempts to pull the parts 21, 25 towards one another.

[0030] Fig. 7 shows a variant of the locking device 108, in which those parts that have the same function as in the above example have been given the same designations. This automatic locking device 108 functions by placing the pins 151 of a lifting yoke 150 in the corner box 152 of the load carrier 1 to obtain a locking function.

[0031] This is based on the principle of a beam 153, which is capable of pivoting about a shaft 154 in the load carrier 1 and has a spring 155 at one end 153A on the upper side of the beam, being capable of attachment at its other end to an actuating rod 14 in accordance with the above. The position of the actuating rod 14 determines the recess 156, 157 in which a pin 158 on the actuating rod 14 must be accommodated depending on the extended position 156 or the retracted position 157 of the legs 3. The spring 155, which can be in the form of a leaf spring, is joined to the beam 153. In the course

of locking the locking mechanism 151 of the yoke 150 in the matching corner box opening 159, the spring is forced downwards and placed under tension. When the load carrier 1 is subsequently lifted, the force of the spring 155 causes the beam 153 to rotate about the pivot link 154, with the result that the pin 158 is released from the locking recess 157 and permits the pin 158 to be displaced along a groove 160 in the beam 153 in order to be blocked in the locking recess 156 when the legs 3 have been extended into the supporting position.

[0032] Fig. 8 shows an example of how the invention is applied to a container 200, in conjunction with which a whole or divided load carrier 201 with leg arrangements in accordance with the invention is assembled. Application is effected to the corner boxes 275, 276 in this case. The function is identical with that described above and with the embodiments illustrated in the drawings.

[0033] The schematic representation of the handling of load carriers 1 arranged in accordance with the present invention, as shown in Fig. 11, comprises the following operations:

- A. Lifting from a vehicle after releasing the security devices on the supporting legs.
- B. Setting down with supporting legs extended.
- C. Transport of lift trailer for ro-ro handling on board a vessel.
- D. Positioning of load carrier on supporting legs.
- D1. Withdrawal of transliifter.
- D2. Lowering the load carrier for retraction of supporting legs.
- E. Further handling of the load carrier with its legs retracted onto a road or rail vehicle, or for lo-lo handling on board a vessel.
- F. Stacking empty units for positioning.

[0034] Pictures 100-600 shown in Fig. 12 also illustrate the various handling stages of the invention with the two loading sequences, Ro-Ro and Lo-Lo.

[0035] Picture 100 shows a goods vehicle carrying a load;

[0036] Picture 200 shows how the legs 3 have been extended on the load carrier 1 under load after leaving the road vehicle or railway train for loading by Ro-Ro;

[0037] Picture 300 shows the load carrier 1 with a load prepared for loading on a Ro-Ro vessel with a lift trailer;

[0038] Picture 400 shows loading on a Ro-Ro vessel;

[0039] Picture 500 shows how the legs are released before lifting the load and subsequent lifting; and

[0040] Picture 600 shows lifting of a load on a Lo-Lo vessel.

[0041] The invention is not restricted to the illustrative embodiments described above and shown in the drawings, but may be modified within the scope of the Patent Claims without departing from the idea of invention.

Claims

1. Arrangement for a load carrier (1) in the form of a platform module so arranged as to be capable of being handled without restriction between transport positions, rail, road vehicle and boat, and which, on its underside (2), exhibits a number of legs (3) for setting up the load carrier (1) on a base (4), and the legs (3) are mounted so that they are capable of pivoting in internal spaces (5) in the load carrier (1) respectively between a retracted (I) and an extended (II) position, **characterized in that** a locking device (8) is so arranged as to prevent unintentional retraction (6) or extension (7) of the legs (3) in question and thus to lock the legs (3) in the intended retracted (6) or extended (7) position, the locking device (8) comprising for each leg (3) an actuating rod (14) and an actuation mechanism (18), each leg (3) being pivotally attached to the actuating rod (14), said actuating rod (14) being lockable in the load carrier (1) in two positions in order to hold the legs (3) in the two aforementioned positions (I, II) and, said actuating rod (14) being movable between its two positions by means of the actuation mechanism (18), whereby the actuating rod (14) acts as a movement transmission device between the actuation mechanism (18) and the said leg (3) to permit the setting of the legs (3) to a desired position (I, II).
2. Arrangement as claimed in Patent Claim 1, **characterized in that** the respective legs (3) are preferably formed from pairs of support beams (3¹, 3²), which are interconnected in such a way as to pivot together.
3. Arrangement as claimed in Patent Claim 2, **characterized in that** the support beams (3¹, 3²) are arranged in parallel with one another, and **in that** a foot beam (11) is connected to the outer free end (3^{1A}, 3^{2A}) of the respective support beam in order to function on the one hand as a connecting link between the support beams (3¹, 3²), and on the other hand as a support on the ground.
4. Arrangement as claimed in Patent Claim 3, **characterized in that** one of the support beams (3¹) is attached to the actuating rod (14), the function of which is to act on the one hand as a blocking device for the support beams (3¹, 3²), and on the other hand as a movement transmission device for an actuation mechanism (18) to permit adjustment of the support beams (3¹, 3²) in the desired position (I, II).
5. Arrangement as claimed in Patent Claim 4, **characterized in that** one part (14A) of the actuating rod (14) is capable of being accommodated in a slotted recess (16) in one of said support beams (3¹).

6. Arrangement as claimed in Patent Claim 5, **characterized in that** the recess (16) is arranged on one edge (17) of the long side of the support beam, in conjunction with which the actuating rod (14) is pivotally attached to the support beam (3¹).
7. Arrangement as claimed in one or other of Patent Claims 4-6, **characterized in that** the actuating rod (14) exhibits, at its end (14B) facing away from the support beam (3¹), a manually actuated, spring-assisted locking catch (19), which incorporates a locking arm (20) which is pivotally mounted about a pivot shaft in the load carrier (1) and is attached to the actuating rod (14).
8. Arrangement as claimed in Patent Claim 7, **characterized in that** a pin (21) projecting laterally in proportion to the said actuating rod (14) is capable of being movably accommodated in a groove (22) in said locking arm (20).
9. Arrangement as claimed in one or other of Patent Claims 1-8, whereby a leg arrangement (3A-3D) is arranged at the respective corner parts (1A-1D) of the platform module in recesses (5) provided for this purpose, **characterized in that** one pair (3C-3D) of leg arrangements exhibits rolling devices (23), such as wheels or rollers, to permit the platform module (1) to roll on a base (4).

Patentansprüche

1. Anordnung für einen Lastträger (1) in der Form eines Plattformmoduls, das so ausgebildet ist, dass es ohne Beschränkung zwischen Transportpositionen, Schienen-, Straßenfahrzeuge und Schiffe, gehandhabt werden kann, und das auf seiner Unterseite (2) eine Anzahl von Beinen (3) aufweist, um den Lastträger (1) auf einer Basis (4) aufzustellen, wobei die Beine (3) so befestigt sind, dass sie in der Lage sind, in Innenräumen (5) in dem Lastträger (1) jeweils zwischen einer zurückgezogenen (I) und ausgefahrenen (II) Stellung zu schwenken, **dadurch gekennzeichnet,** **dass** eine Verriegelungsvorrichtung (8) so angeordnet ist, um ein unbeabsichtigtes Zurückziehen (6) oder Ausfahren (7) der fraglichen Beine (3) zu verhindern und somit die Beine (3) in der beabsichtigten zurückgezogenen (6) oder ausgefahrenen (7) Stellung zu verriegeln, wobei die Verriegelungsvorrichtung (8) für jedes Bein (3) eine Betätigungsstange (14) und einen Betätigungsmechanismus (18) umfasst, wobei jedes Bein (3) schwenkbar an der Betätigungsstange (14) angebracht ist, wobei die Betätigungsstange (14) in dem Lastträger (1) in zwei Stellungen verriegelbar ist, um die Beine (3) in den beiden vorher erwähnten Stellungen (I, II) zu

halten, und wobei die Betätigungsstange (14) zwischen ihren beiden Stellungen mittels des Betätigungsmechanismus (18) bewegbar ist, wobei die Betätigungsstange (14) als eine Bewegungsübertragungsvorrichtung zwischen dem Betätigungsmechanismus (18) und dem Bein (3) wirkt, um das Einstellen der Beine (3) in eine gewünschte Stellung (I, II) zuzulassen.

2. Anordnung nach Anspruch 1,
dadurch gekennzeichnet,
dass die jeweiligen Beine (3) bevorzugt aus Paaren von Stützträgern (3¹, 3²) ausgebildet sind, die so miteinander verbunden sind, um gemeinsam zu schwenken.
3. Anordnung nach Anspruch 2,
dadurch gekennzeichnet,
dass die Stützträger (3¹, 3²) parallel zueinander angeordnet sind, und dass ein Fußträger (11) mit dem äußeren freien Ende (3^{1A}, 3^{2A}) des jeweiligen Stützträgers verbunden ist, um einerseits als ein Verbindungselement zwischen den Stützträgern (3¹, 3²) und andererseits als eine Stütze auf dem Boden zu funktionieren.
4. Anordnung nach Anspruch 3,
dadurch gekennzeichnet,
dass einer der Stützträger (3¹) an der Betätigungsstange (14) befestigt ist, deren Funktion darin besteht, einerseits als eine Blockiervorrichtung für die Stützträger (3¹, 3²) und andererseits als eine Bewegungsübertragungsvorrichtung für einen Betätigungsmechanismus (18) zu wirken, um eine Einstellung der Stützträger (3¹, 3²) in der gewünschten Stellung (I, II) zuzulassen.
5. Anordnung nach Anspruch 4,
dadurch gekennzeichnet,
dass ein Teil (14A) der Betätigungsstange (14) dazu in der Lage ist, in einer geschlitzten Ausnehmung (16) in einem der Stützträger (3¹) aufgenommen zu werden.
6. Anordnung nach Anspruch 5,
dadurch gekennzeichnet,
dass die Ausnehmung (16) an einem Rand (17) der langen Seite des Stützträgers angeordnet ist, wobei die Betätigungsstange (14) in Verbindung mit dieser schwenkbar an dem Stützträger (3¹) befestigt ist.
7. Anordnung nach einem der Ansprüche 4 - 6,
dadurch gekennzeichnet,
dass die Betätigungsstange (14) an ihrem Ende (14B), das von dem Stützträger (3¹) weg weist, ein manuell betätigtes, federunterstütztes Verriegelungsfangelement (19) aufweist, das einen Verrie-

gelungsarm (20) umfasst, der schwenkbar um eine Schwenkwelle in dem Lastträger (1) herum angebracht und an der Betätigungsstange (14) befestigt ist.

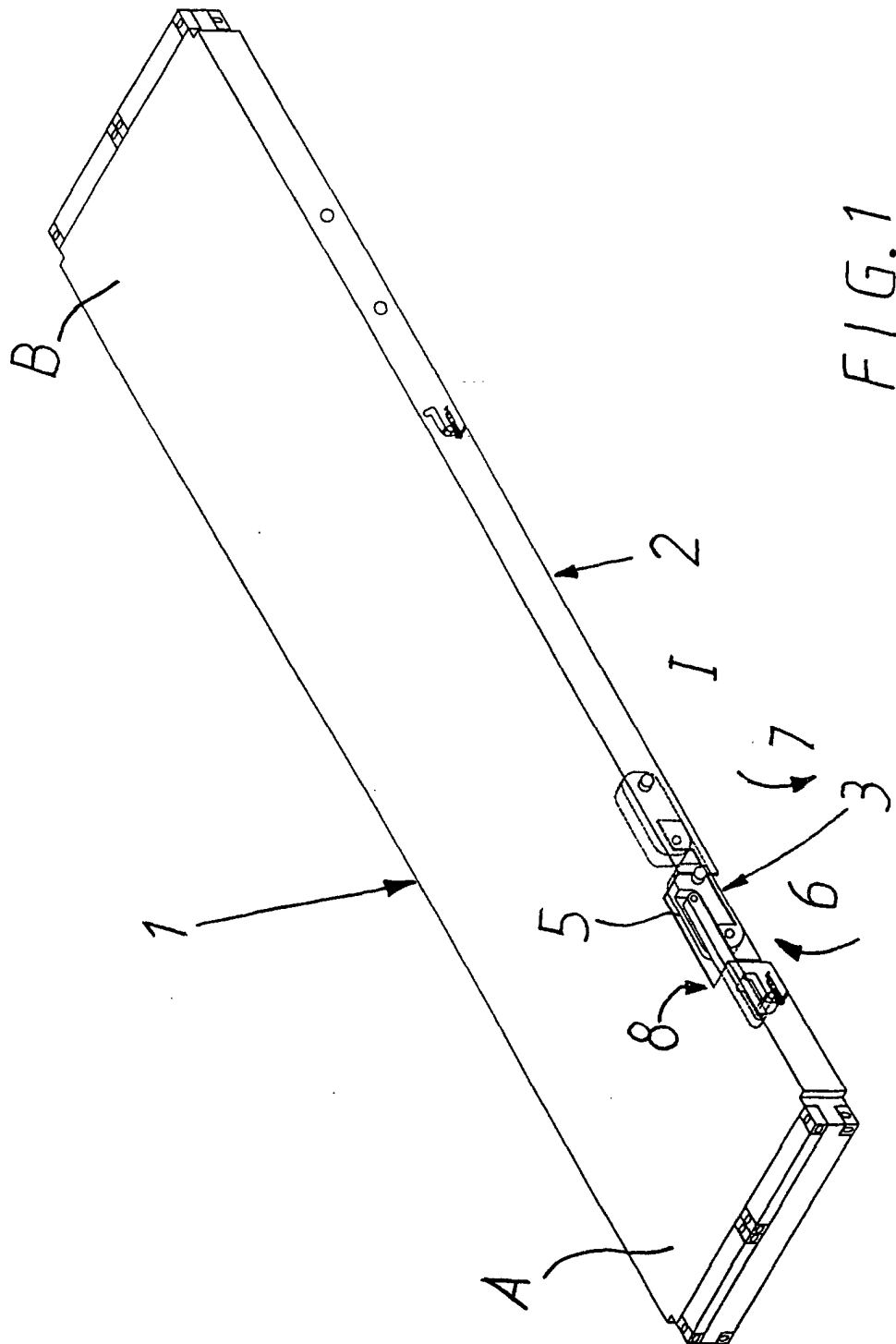
8. Anordnung nach Anspruch 7,
dadurch gekennzeichnet,
dass ein Stift (21), der bezüglich der Betätigungsstange (14) seitlich vorragt, dazu in der Lage ist, bewegbar in einer Nut (22) in dem Verriegelungsarm (20) aufgenommen zu werden.
9. Anordnung nach einem der Ansprüche 1 - 8, wobei eine Beinanordnung (3A - 3D) an den jeweiligen Eckteilen (1A - 1D) des Plattformmoduls in Ausnehmungen (5) angeordnet ist, die zu diesem Zweck vorgesehen sind,
dadurch gekennzeichnet,
dass ein Paar (3C - 3D) von Beinanordnungen Rollvorrichtungen (23) aufweist, wie beispielsweise Räder oder Rollen/Walzen, um zu ermöglichen, dass das Plattformmodul (1) auf einer Basis (4) rollen kann.

Revendications

1. Dispositif pour porte-charges (1) sous la forme d'un module en plate-forme prévu pour être manipulé sans limitation entre des positions de transport, ferroviaire, sur véhicules terrestres et sur bateaux, dispositif dont la sous face (2) présente un nombre de béquilles (3) pour élever en position haute le porte-charges sur une base (4), et les béquilles (3) étant montées de façon à pouvoir pivoter dans des espaces (5) internes au porte-charges respectivement entre une position rétractée (I) et une position étendue (II) **caractérisé en ce qu'il** est prévu un dispositif de verrouillage réalisé de telle façon qu'il empêche une rétraction (6) ou une extension (7) involontaire des dites béquilles (3) et de verrouiller ainsi les béquilles (3) dans la position rétractée (6) ou étendue (7) souhaitée, le dispositif de verrouillage (8) comprenant pour chaque béquille (3) une tige d'actionnement (14) et un mécanisme d'actionnement (18), chaque béquille (3) étant reliée de façon pivotante à la tige d'actionnement (14), cette tige d'actionnement (14) étant verrouillable à l'intérieur du porte-charges (1) dans deux positions afin de maintenir la béquille (3) dans les deux positions (I) et (II) indiquées ci-dessus et cette tige d'actionnement (14) étant déplaçable entre ses deux positions au moyen du mécanisme d'actionnement (18) par lequel la tige d'actionnement (14) agit en tant que dispositif de transmission de mouvement entre le mécanisme d'actionnement et la béquille (3) pour permettre la mise en place des béquilles dans la position désirée.

2. Dispositif selon la revendication 1 **caractérisé en ce que** les béquilles (3) sont constituées de préférence de paires de longerons porteurs (3¹, 3²) reliés entre eux de façon à pouvoir pivoter ensemble. 5
3. Dispositif selon la revendication 2 **caractérisé en ce que** les longerons porteurs (3¹, 3²) sont disposés parallèles entre eux, et **en ce qu'un** profilé-patin (11) est relié à l'extrémité libre (3^{1A}, 3^{2A}) du longeron porteur respectif de façon à fonctionner d'une part comme liaison articulée entre les longerons porteurs (3¹, 3²) et d'autre part comme support au sol. 10
4. Dispositif selon la revendication 3 **caractérisé en ce que** l'un des longerons porteurs (3¹) est relié à la tige d'actionnement (14) dont la fonction est d'une part celle d'un dispositif de verrouillage pour le longeron porteur (3¹, 3²) et d'autre part celle d'un dispositif de transmission de mouvement pour un mécanisme d'actionnement (18) en vue de permettre la mise en place des longerons porteurs (3¹, 3²) dans la position désirée (I, II). 15 20
5. Dispositif selon la revendication 4 **caractérisé en ce que** l'une des parties (14A) de la tige d'actionnement (14) peut se loger dans un retrait en forme de fente (16) dans l'un des longerons porteurs (3¹). 25
6. Dispositif selon la revendication 5 **caractérisé en ce que** le retrait (16) est prévu sur l'un des côtés (17) de la face allongée du longeron porteur par lequel la tige d'actionnement (14) est montée pivotante sur le longeron porteur (3¹). 30 35
7. Dispositif selon l'une ou l'autre des revendications 4 à 6 **caractérisé en ce que** la tige d'actionnement (14) présente à son extrémité (14B) regardant au delà du longeron porteur (3¹) un verrou manuel (19) assisté par ressort qui comporte un levier de verrouillage (20) monté pivotant sur un axe-pivot à l'intérieur du porte-charges (1) et qui est relié à la tige d'actionnement (14). 40
8. Dispositif selon la revendication 7 **caractérisé en ce qu'un** téton (21) en saillie latérale proportionnelle à la tige d'actionnement (14) est rendu mobile dans une gorge (22) dans ce levier de verrouillage (20). 45 50
9. Dispositif selon l'une ou l'autre des revendications 1 à 8 **caractérisé en ce que** l'ensemble formant béquille (3A-3D) est disposé respectivement à chacun des angles (1A-1D) de la plate-forme dans des retraits (5) prévus à cet effet **caractérisé en ce qu'une** paire (3C-3D) d'ensembles formant béquille présente des dispositifs de roulement tels que des roues ou des galets de façon à permettre à la plate- 55

forme de rouler sur une base (4).



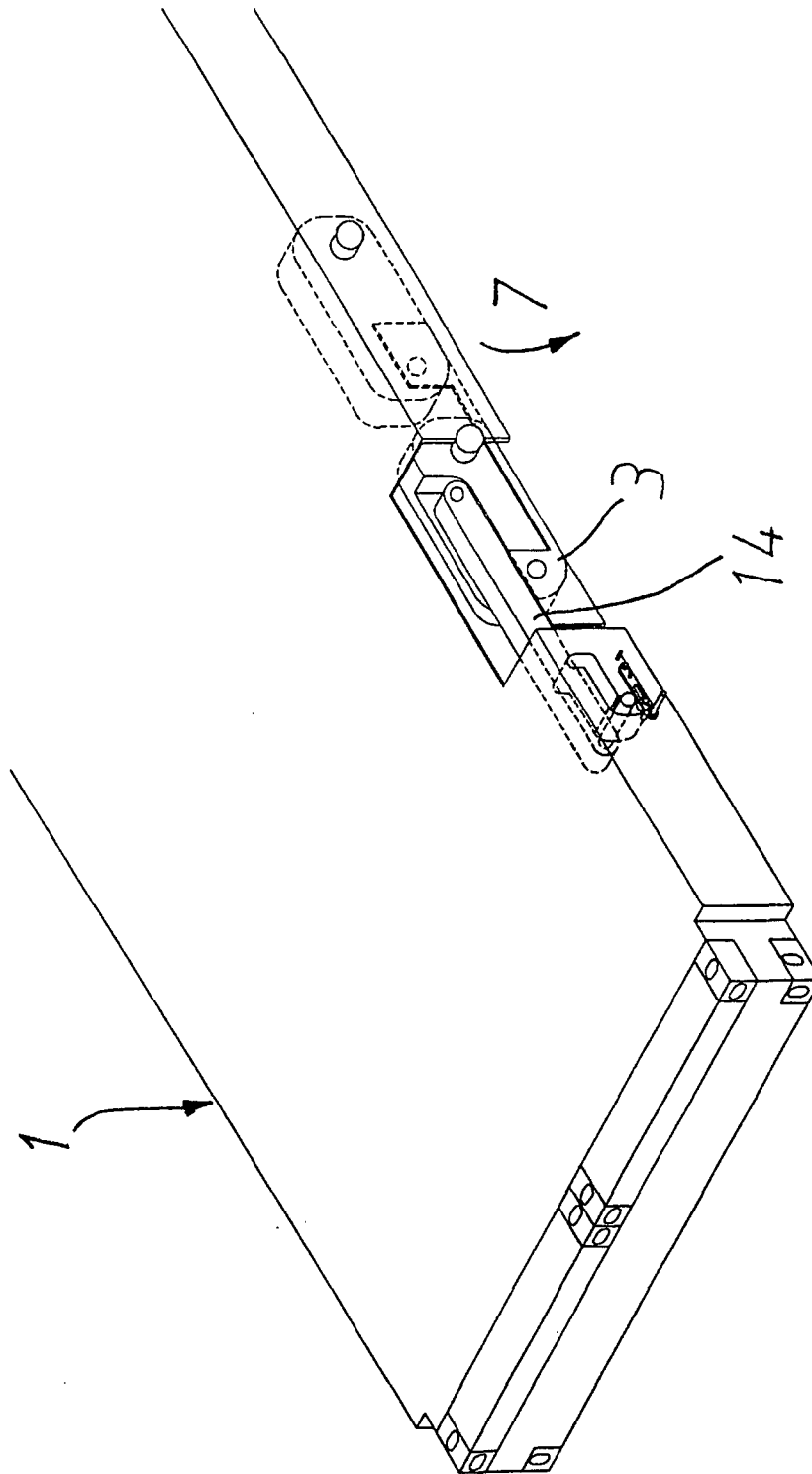
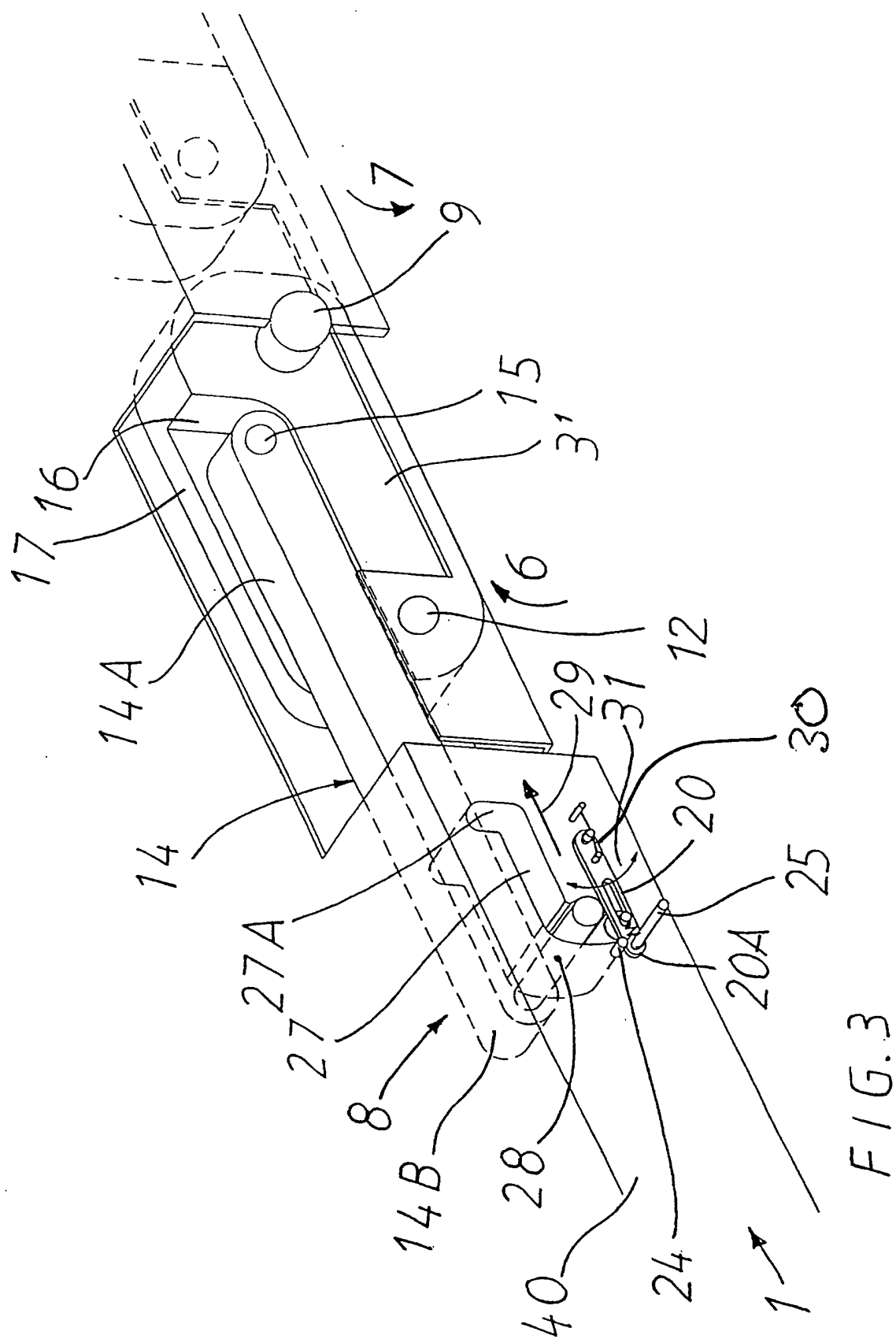


FIG. 2



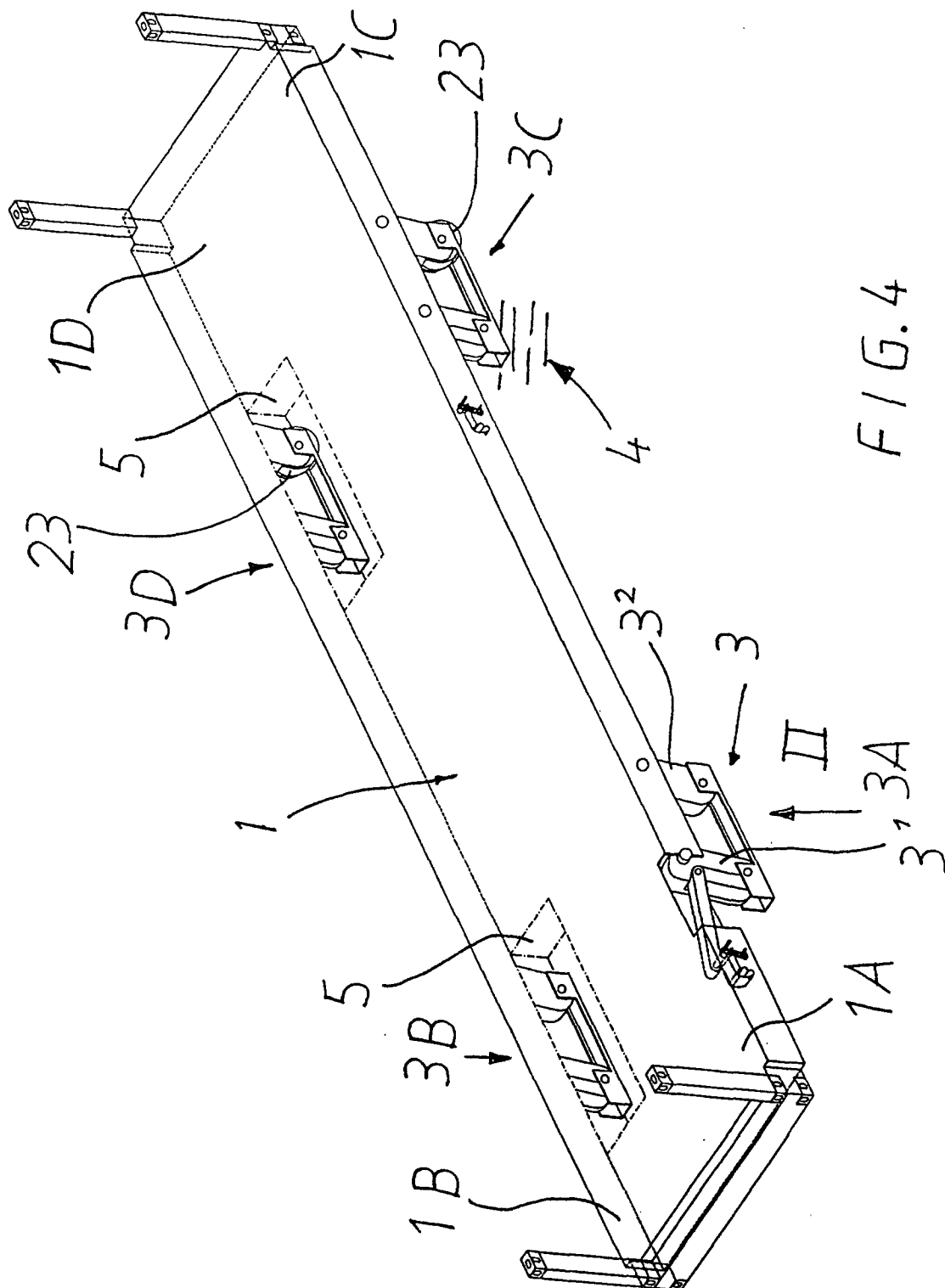


FIG. 4

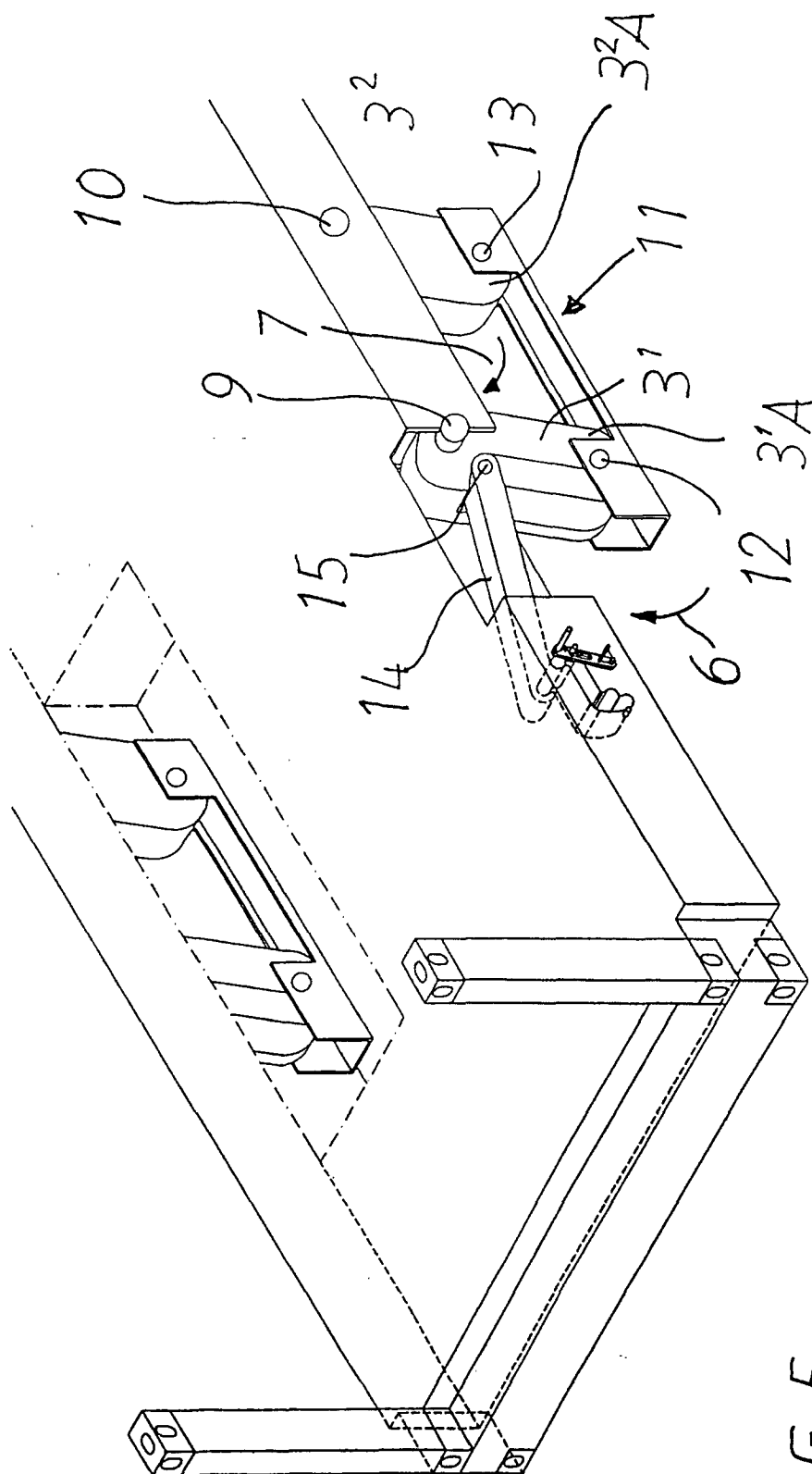


FIG. 5

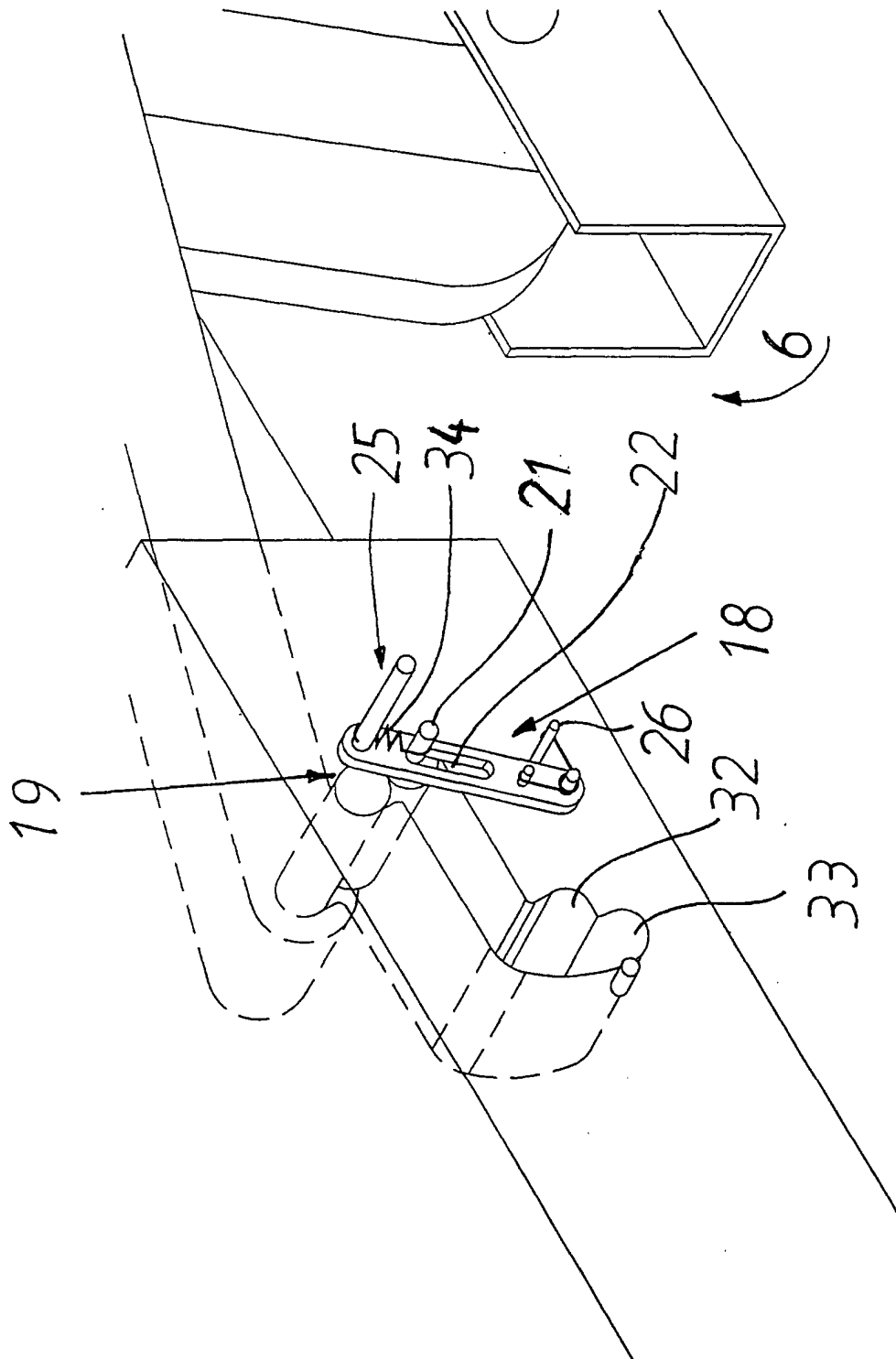
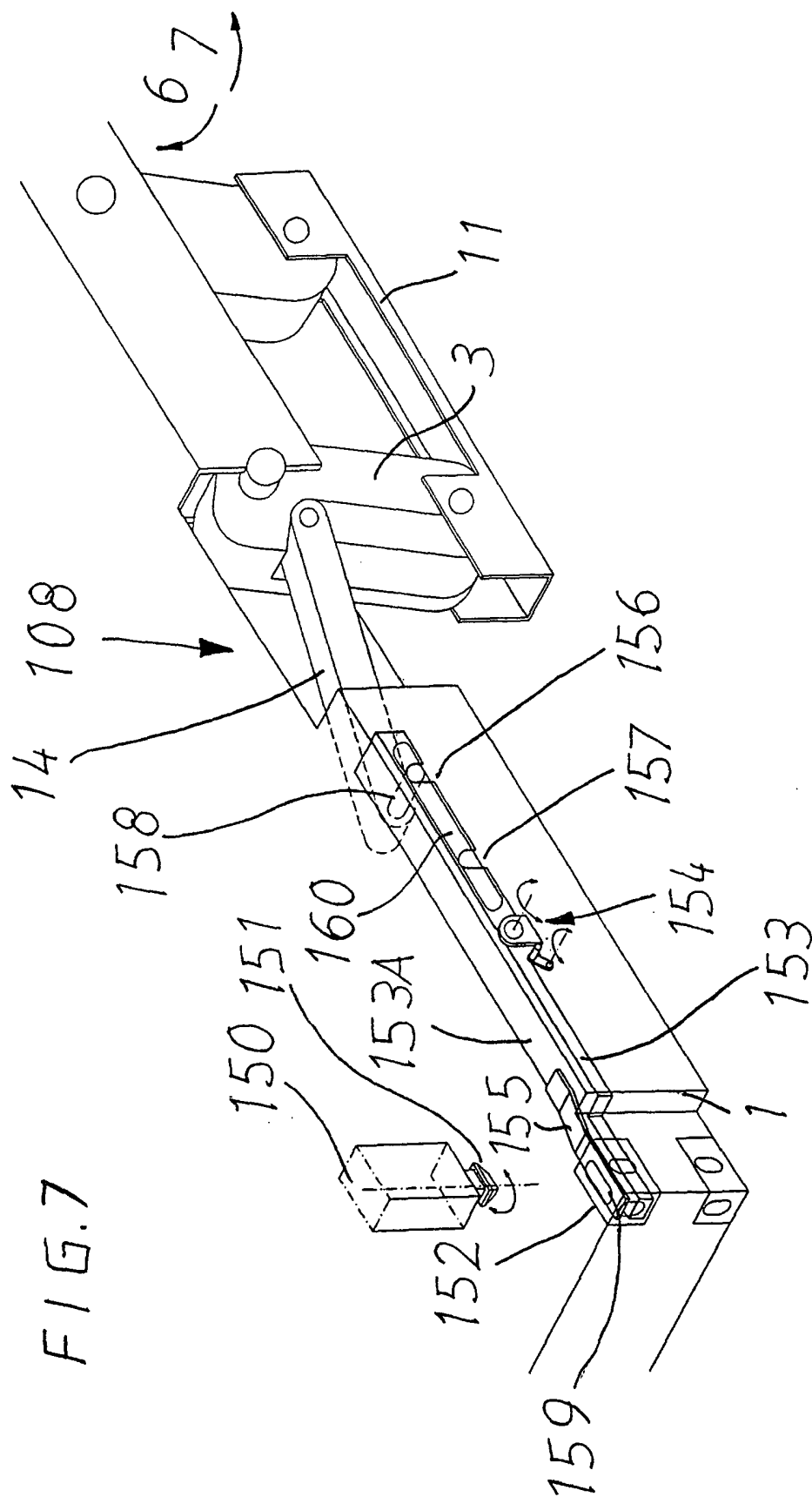


FIG. 6



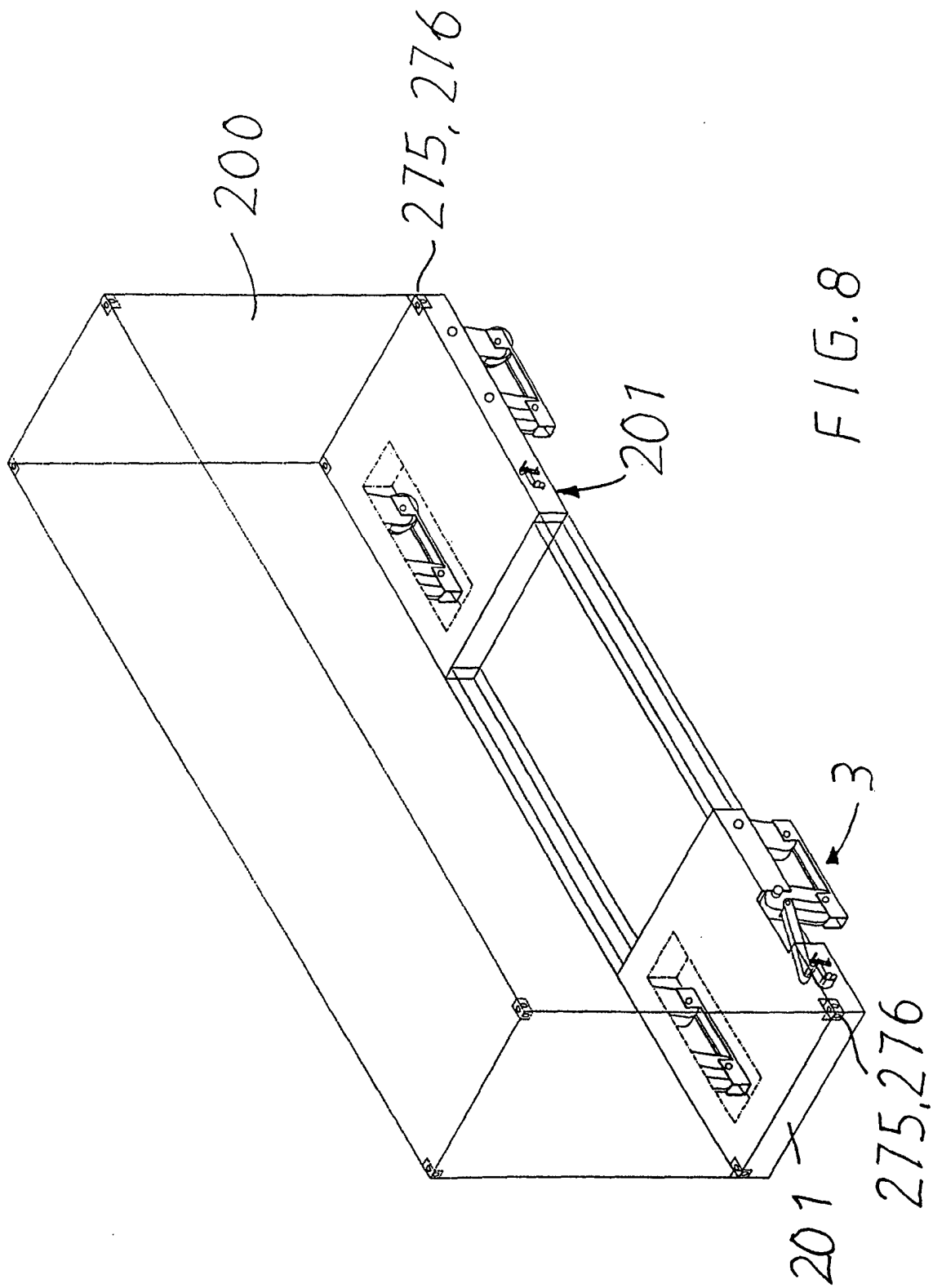


FIG. 9

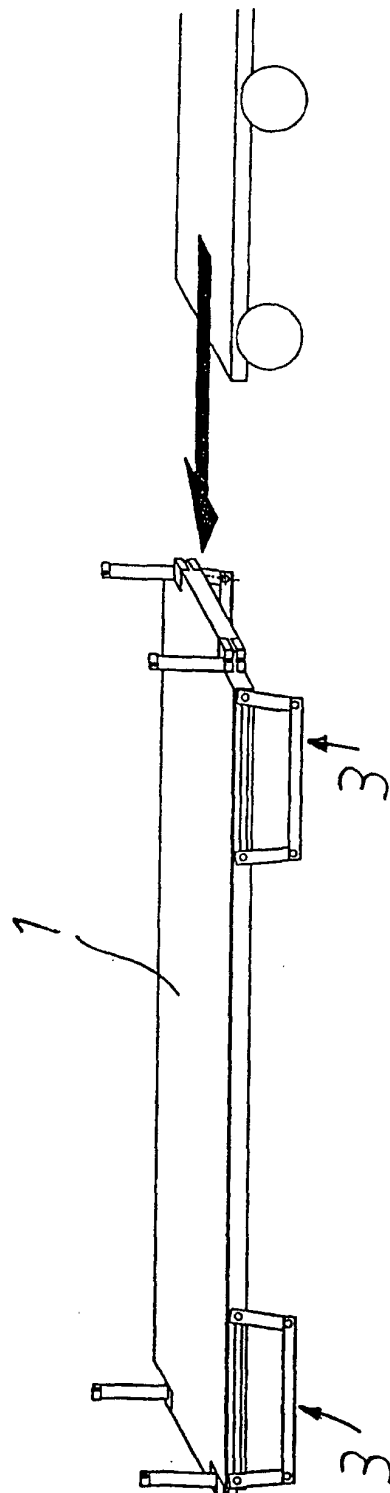
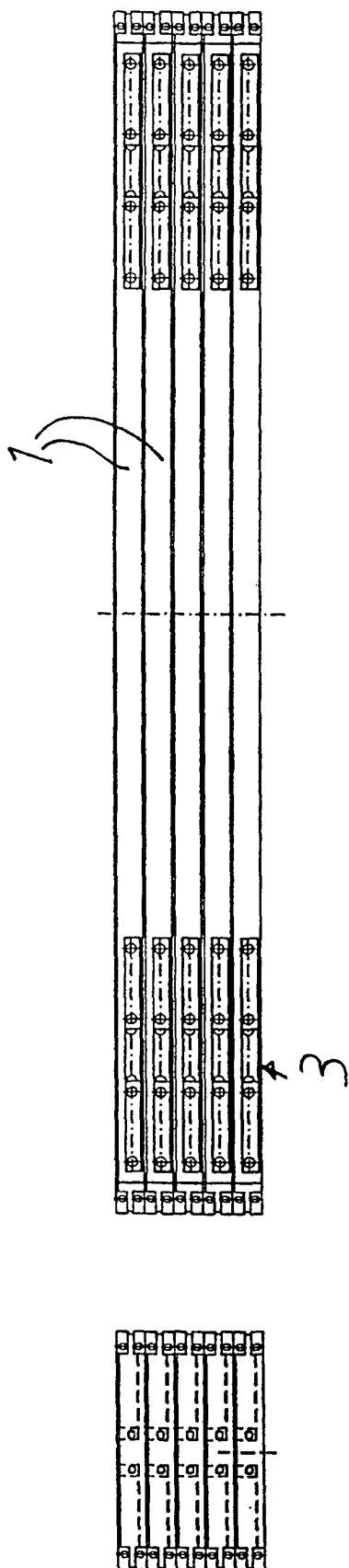


FIG. 10

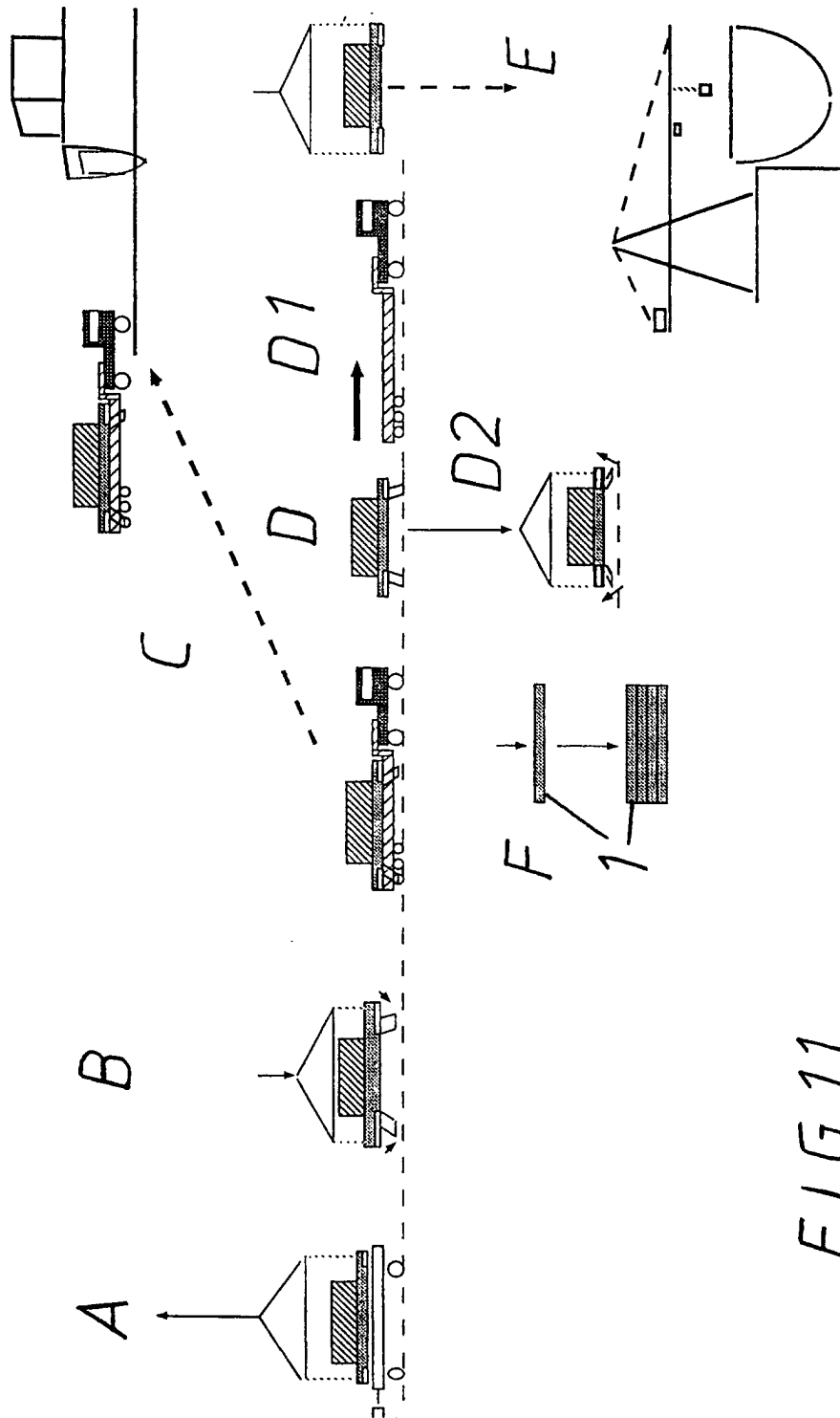


FIG. 11

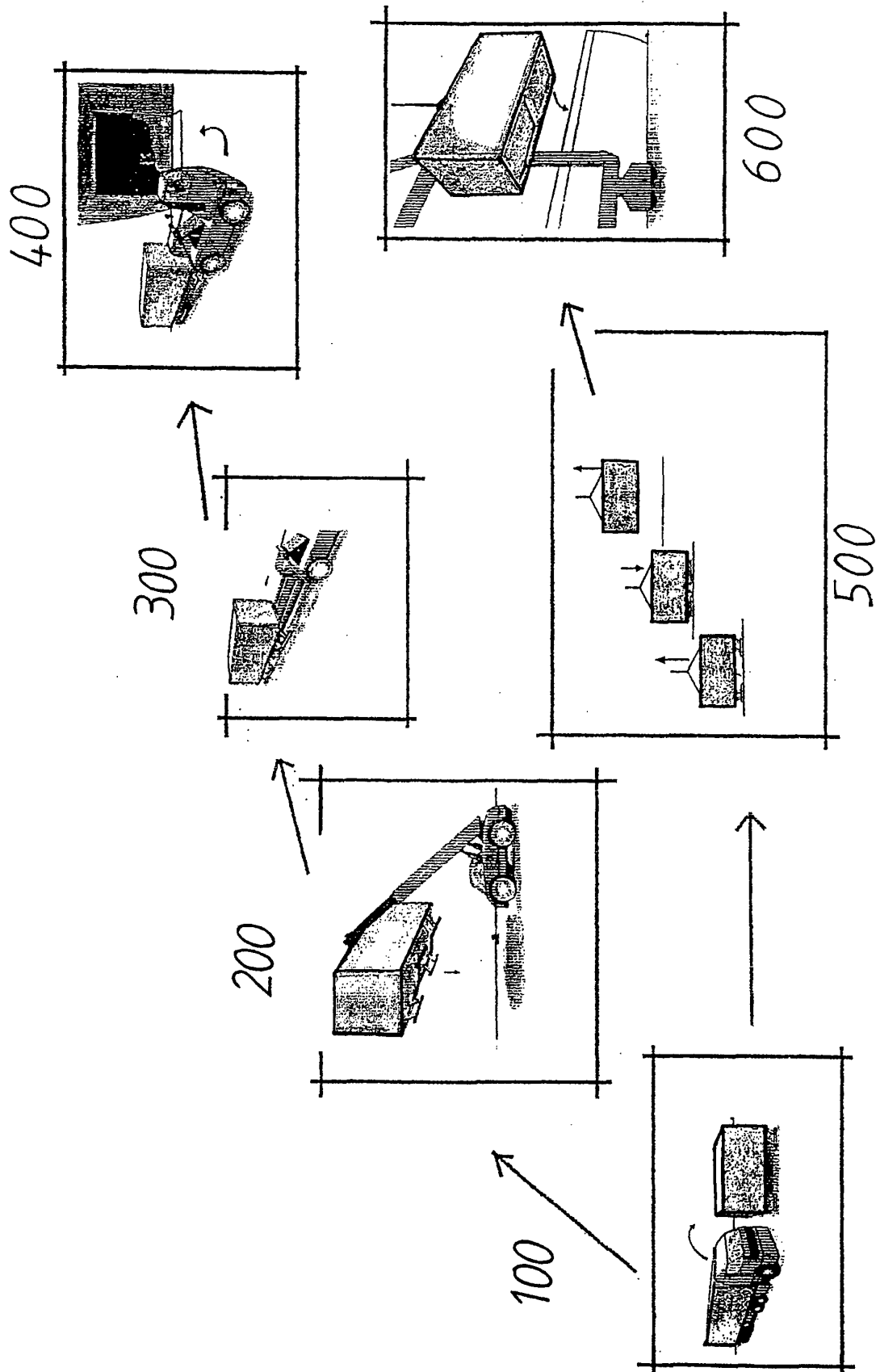


FIG. 12