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(54) Running track for a lift

(57) The present invention concerns a running track (1) on a lift for vehicles, including an end plate (2) at each end of the running track (1), and where an arrangement including one or more supports (4) and one or more holding means (5) is disposed under and in connection with the end plate (2), which end plate (2) is articulated about a first journal (3) to the end (6)of the running track (1), and where the arrangement in a first position is adapted to lock the end plate (2) at an angular position about the first journal (3) by the supports (4) engaging the holding means (5), and at a second position for allowing the end plate (2) to pivot freely about the first journal (3), where the supports (4) are mounted pivoably about a second journal (15) which is either diposed at an outer edge of the end plate (2) opposite the outer edge where the end,plate (2) is pivotably connected to the end (6) or at an underside (22) of the end plate (2), where the end plate (2) is pivotably connected to the end (6), and by the holding means (5) being arranged on the end (6).

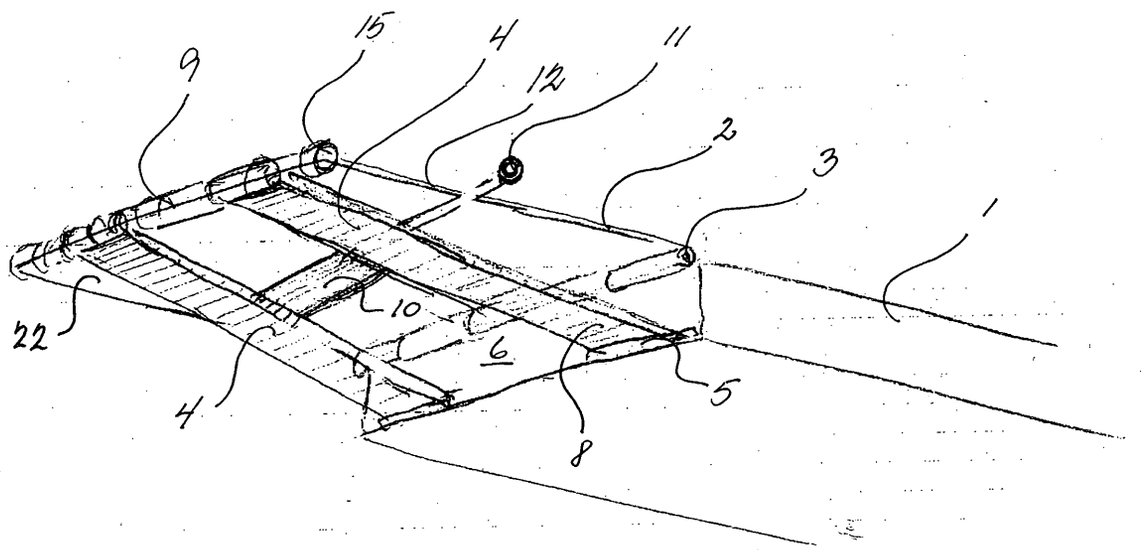

Fig 1.

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Description

Scope of the Invention

[0001] The present invention concerns a running track on a lift for vehicles, including an end plate at each end of the running track, and where an arrangement including one or more supports and one or more holding means is disposed under and in connection with the end plate, which end plate is articulated about a first journal to the end of the running track, and where the arrangement in a first position is adapted to lock the end plate at an angular position about the first journal by the supports engaging the holding means, and in a secqnd position for allowing the end plate to pivot freely about the first journal.

Background of the Invention

[0002] When repairing vehicles, it may be an advantage that the vehicle is lifted to a certain level so that the wheels and bottom carriage of the vehicle may be accessed when e.g. repairs are to be performed regarding brakes, coupling, differential gear, steering gear, shock absorbers, exhaust system and/or tyres.

[0003] In order to elevate a vehicle, different kinds of lifts are used which usually include running tracks that are typically shorter than the wheel base on the vehicle, whereby they constitute the support of the vehicle body when the vehicle is elevated above the floor surface.

[0004] In order to get the vehicle across the running tracks of the lift, these are provided with a pivoting end plate at each end of the running track. The free end of the end plate is suited for resting on the floor surface when the running tracks of the lift bears against the floor surface and thus constitute an entry ramp for the vehicle.

[0005] If the axle base between the wheel sets of the vehicle is much greater than the length of the running tracks, it will advantageous if the end plates are locked in a horizontal position whereby they constitute an extension of the running tracks.

[0006] There are already different types of blocking arrangements that provide for the end plate to be retained in a horizontal position and which can be released so that the end plates are hanging freely.

[0007] Such a blocking arrangement is described in the Danish translation of the European patent publication DK/EP 0878 438 T3 which by means of a number of holding means, guides and support legs can secure the end plate in a horizontal position.

[0008] The disadvantage of this type of blocking arrangement is that it is technically cumbersome to make and assemble, since it contains many movable parts that are to be brought into mutual engagement in order to lock the end plate in a horizontal position.

[0009] A further drawback is that the holding means are fastened to the underside of the end plate, entailing that it is the strength of the fastening between holding means and end plate that is decisive for the holding means to keep the end plate in the desired horizontal position, even if a load comes on the end plates.

[0010] It is furthermore described how there are holes in the end plates in order that one may visually check if the support leg is in proper engagement, indicating that sometimes it may be difficult to know whether the end plate is secured, or whether it will pivot downwards when the running tracks are lifted. The fact that holes are produced in the end plates implies a higher cost price of the product since a further production process is required.

Purpose of the Invention

[0011] It is the object of the present invention to indicate a running track which is technically simple to produce and which is provided with a simple, efficient and safe blocking arrangement for the end plates.

[0012] This is achieved with a running track of the kind specified in the preamble of claim 1, and where the said supports are mounted pivotably about a second journal which is either disposed at an outer edge of the end plate opposite the outer edge where the end plate is pivotably connected to the end, or at an underside of the end plate where the endplate is pivotably connected to the end, and where the holding means are arranged on the end.

Description of the Invention

[0013] In order that a vehicle may easily drive across the running track, the end plate is pivotably connected at each end of the running track, so that an entry ramp is formed on which the wheels of the vehicle may easily pass up/down.

[0014] In order to access repairing the vehicle in the area around the wheels, it is necessary with as much space as possible around the wheels. Therefore, the end plates are pivotably connected to the end of the running track so that when the running track is lifted up, the end plate can be pivoted downwards and thereby allow the mechanic to have more space around the wheels.

[0015] If we are speaking about repairs on a vehicle where the wheel base between the wheel sets of the vehicle is greater than the length of the running tracks, it will an advantage if the running tracks are extended so that the support face on the chassis of the vehicle is the greatest possible. This may be achieved in that the end plates are locked in a horizontal position whereby they constitute an extension of the running tracks.

[0016] The arrangement, which ensures a simple, efficient and secure blocking of the end plate in a horizontal position, is disposed under and in connection with the end plate, and includes supports and holding means which by mutual engagement retains the end plate in a horizontal position.

[0017] The simple structure of the arrangement is achieved by the supports being connected pivotably

about a journal which is either disposed at the outer edge of the end plate or is disposed at the underside of the end plate. The mentioned outer edge is the edge of the end plate which is opposite the outer edge connected with a journal to the end of the running track.

[0018] The fact that the supports are connected pivotably in a journal which is disposed at a distance from the end of the running track entails that the supports can utilise gravitational force to let end parts of supports fall down against and engage the holding means.

[0019] The holding means are arranged on a lower part of the end of the running track so that end parts of supports cannot pass by freely and are thereby limited to pass up and down along the end of the running track.

[0020] The fact that the holding means are disposed at the end of the running track provides that it may absorb some of the compressive forces that are transmitted from a load on running tracks to the holding means via the supports, entailing that this construction can withstand greater loads than if the holding means were disposed in connection with the underside of the end plate.

[0021] In order to ensure that the said one end part of the support engages the holding means, the holding means is designed as a C-element, where one end part of the support has a complementing shape so that one end part of the support fits into the C-shape of the holding means, whereby there is achieved a secure engagement, and this prevents the end part of the support from performing a horizontal movement up along the end of the edge rail.

[0022] In an embodiment of the invention, there is only used a centrally disposed support which e.g. can be a flat bar or a plate having the same width as the end plate.

[0023] In the preferred embodiment of the invention there are two supports that are hinged at the underside of the end plate and connected with a crossbar so that the two supports are handled together.

[0024] In order to facilitate handling of the end plate, the said arrangement furthermore includes a handle which is adapted for actuating the support. As the handle is mounted in connection with a crossbar connecting the supports, it is possible to move the supports and the end plate about their respective journals at each outer edge of the end plate, so that in a first position, the end plate is secured in a horizontal position, and in a second position pivots freely about the journal.

[0025] As the supports are hinged at or close to an outer edge of the end plate, they are to be secured against swining outwards when the end plate is lifted, entailing that the supports are hanging as an extension of the end plate.

[0026] This may a disadvantage as unreasonably much time is to be used for putting supports up under the end plate when this is to be placed in a locked horizontal position while at the same time, loosely hanging supports may prevent lowering of the running track.

[0027] Therefore, the arrangement furthermore includes one or more guides that are adapted for retaining the supports at an acute angle in relation to the end plate.

[0028] In a preferred embodiment of the present invention, the guides are designed as brackets that are mounted up under the end plate, and where the support is passed through the bracket during mounting.

[0029] The bracket guides supports in an angular range between minimum 0° and maximum 45°, thereby preventing the supports from swinging freely in relation to the shaft at the outer edge of the end plate.

[0030] In order to ensure that one outer edge of the end plate will easily slide across the floor surface when the running track is lifted and lowered, the arrangement furthermore includes rollers which are disposed at the outer edge of the end plate opposite the outer edge where the end plate is pivotably connected to the end.

[0031] These rollers may extend entirely or partially along the outer edge of the end plate. However, the most important fact is that they have a size/diameter that does not prevent the end plate from being used as entry ramp for the running track.

Short Description of the Drawing

[0032] The invention will now be described further with reference to the accompanying drawing, where:

Fig. 1	shows a perspective view of an end plate according to the invention,
Figs. 2 - 6	show a series of side views of the end plate in various positions, and
Fig. 7	shows a perspective view of a preferred embodiment of the invention.

Detailed Description of the Invention

[0033] On Fig. 1 is seen a perspective view of a running track 1 which is pivotably connected with an end plate 2 in a journal 3. The end plate 2 is shown locked in a horizontal position where and end part 8 of supports 4, which are pivotably connected with the end plate 2 in a journal 15, engages holding means 5 that are arranged at an end 6 of the running track 1.

[0034] Associated with the journal 15, the end plate 2 is provided with rollers 9 providing that the end plate 2 is sliding easily across the floor surface (not shown) when the running track 1 is lifted and the end plate 2 pivot downwards.

[0035] For easy manual moving of the end plate 2, the supports 4 are provide with a crossbar 10 that connects the two supports 4 and ends in a handle 11 at a side edge 12 of the end plate 2.

[0036] On Fig. 2 is shown a sideview of the end plate 2 in Fig. 1 where it is clearly seen that a support 4 in an end part is pivotably connected via a journal 15 with the end plate 2, and that the other end part 8 engages a holding means 5.

[0037] On Fig. 3 is shown how the end plate 2 is released. This is effected by getting hold of the handle 11 and lifting the end plate 2 slightly in direction A, whereby the engagement of the end part 8 with holding means 5 is released.

[0038] Then the end plate 2 is lowered in direction B, and the supports 4 moves up along the end 6 of the running track 1, whereby the end plate 2 turns downwards as shown in Fig. 4 and Fig. 5.

[0039] On Fig. 6 is seen a side view of the running track 1 which is pivotably connected with the end plate 2 in journal 3. The end plate 2 is shown lying down against the floor surface 13, where it forms an entry ramp 14 for the running track 1.

[0040] Rollers 9 associated with the journal 15 cause the end plate 2 to form automatically the entry ramp 14 when the running track 1 is lowered down against the floor surface 13, as the downwards directed force from the running track 1 will force the end plate 2 away from the end of the running track 1.

[0041] In order to secure the end plate 2 in horizontal position as shown in Fig. 1 and Fig. 2, the handle 11 is seized and the end plate 2 is lifted until the end part 8 of the supports 4 engages the holding means 5.

[0042] On Fig. 7 is seen a perspective view of a preferred embodiment of a running track 1 which is pivotably connected with an end plate 2 in a journal 3.

[0043] The end plate 2 is shown secured in a horizontal position where an end part 8 of supports 4 engages holding means 5 that are arranged at an end 6 of the running track 1.

[0044] The supports 4 are each pivotably connected with the end plate 2 in journals 20 that are disposed at the underside 22 of the end plate 2 and close to the outer edge 21 of the end plate 2.

[0045] Crossbar 10 is welded to both supports 4 so that it is possible to handle both supports 4 at the same time. The crossbar 10 is disposed between the shaft 20 and a guide 16.

[0046] The guide 16 is here shown as brackets disposed at the underside of the end plate 2 and through which supports 4 extend, whereby guides 16 prevent the supports 4 from swinging freely downwards.

Claims

1. Running track (1) on a lift for vehicles, including an end plate (2) at each end of the running track (1), and where an arrangement including one or more supports (4) and one or more holding means (5) is disposed under and in connection with the end plate (2), which end plate (2) is pivotably connected about a first journal (3) to the end (6) of the running track (1), and where the arrangement in a first position is adapted to lock the end plate (2) at an angular position about the first journal (3) by the supports (4) engaging the holding means (5), and at a second position for allowing the end plate (2) to pivot freely about the first journal (3), **characterised in that** the supports (4) are mounted pivotably about a second journal (15) which is either diposed at an outer edge of the end plate (2) opposite the outer edge where the end plate (2) is pivotably connected to the end (6) or at an underside (22) of the end plate (2), where the end plate (2) is pivotably connected to the end (6), and by the holding means (5) being arranged on the end (6).

2. Running track (1) according to claim 1, **characterised in that** the arrangement furthermore includes a handle (11) which is adapted for actuating the support (4).

3. Running track (1) according to claim 1-2, **characterised in that** the arrangement furthermore includes one or more guides (16) that are adapted for holding the support (4) at an acute angle in relation to the end plate (2).

4. Running track (1) according to claims 1-3, **characterised in that** the arrangement furthermore includes rollers (9) disposed in the outer edge of the end plate opposite the outer edge where the end plate (2) is pivotably connected to the end (6).

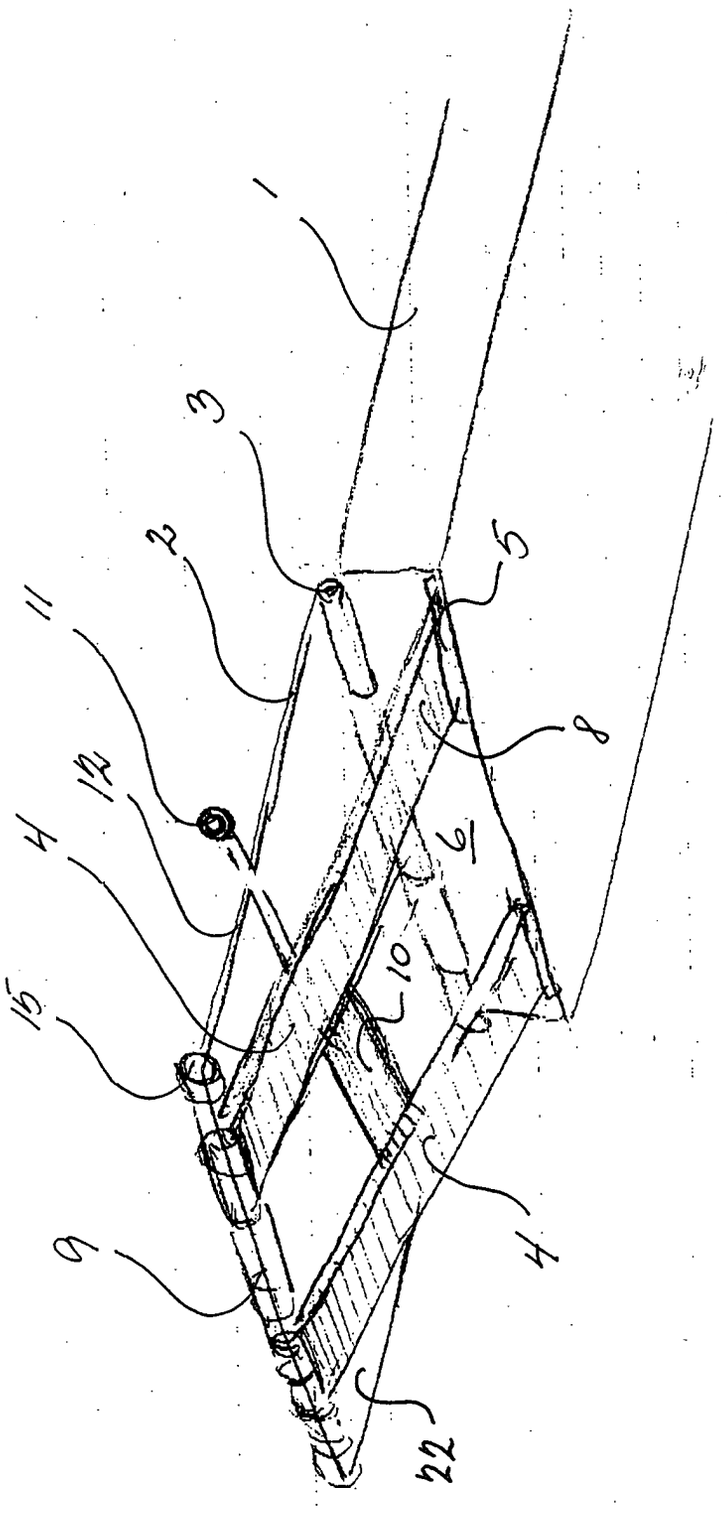

Fig 1.

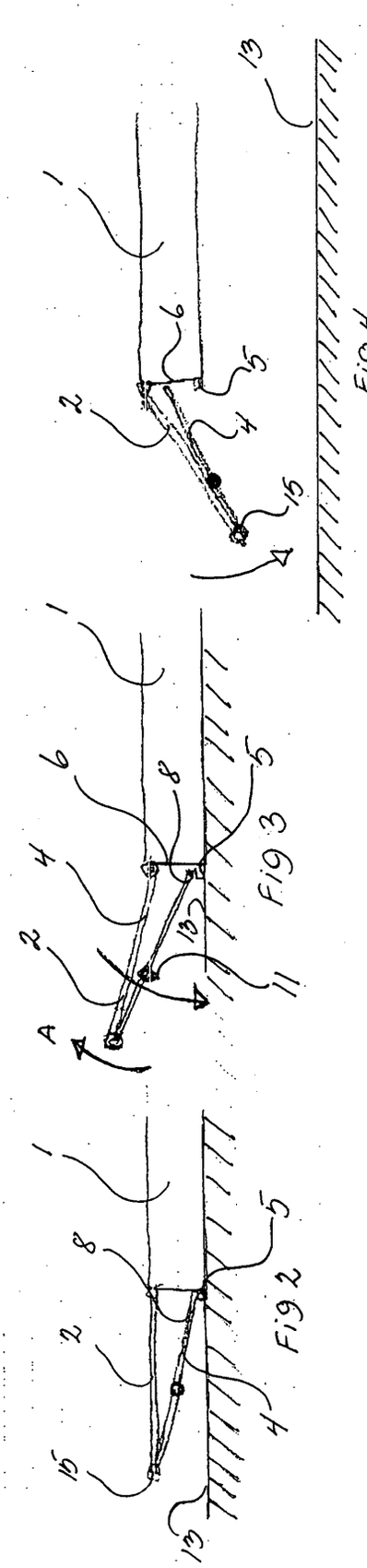

Fig 2

Fig 3

Fig 4

Fig 5

Fig 6

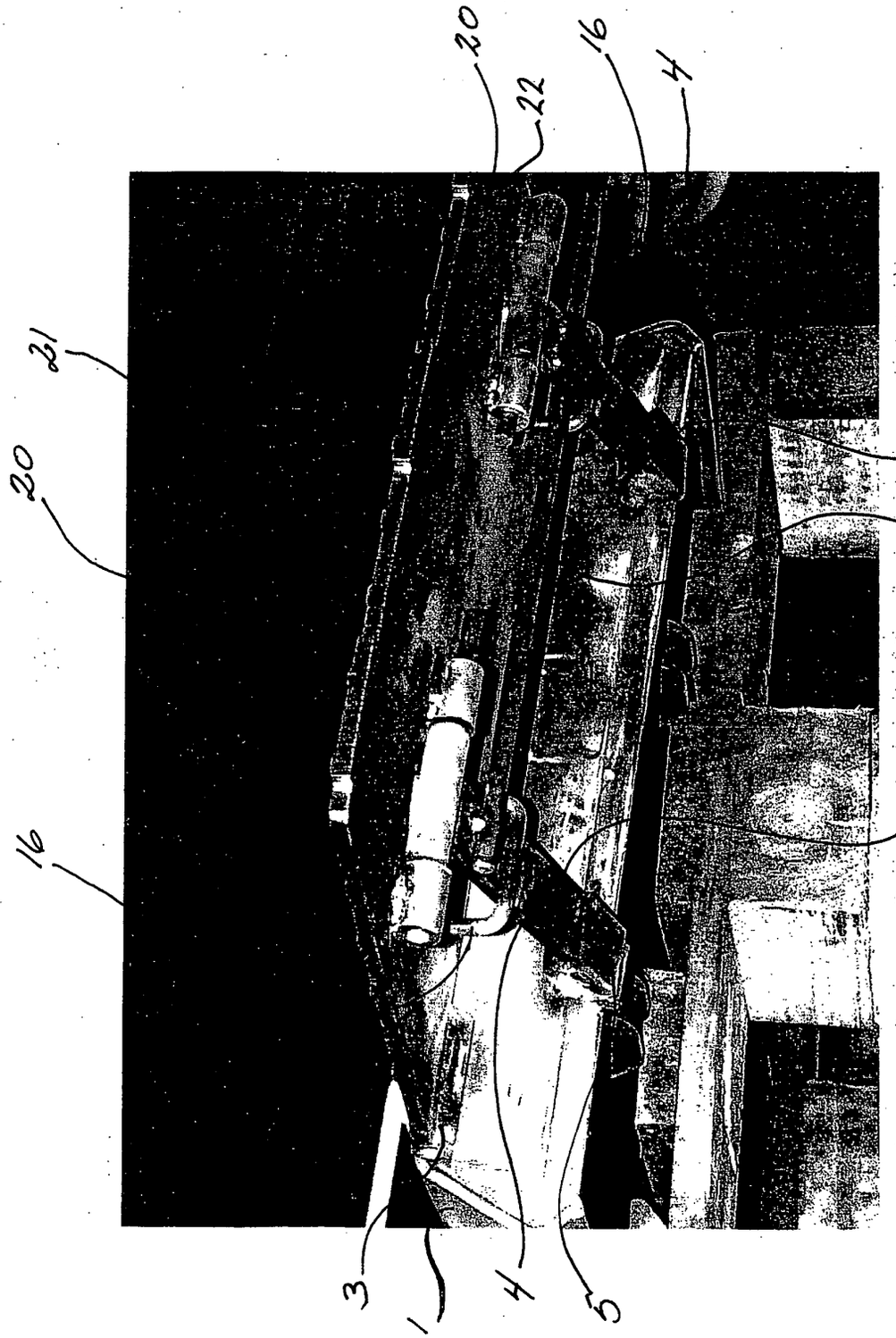

Fig 7

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 02 5393

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 January 2005	Ferrien, Y

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