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

(11) EP 1 340 862 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
03.09.2003 Bulletin 2003/36

(51) Int Cl.[7]: **E04B 1/343**

(21) Application number: **02425104.3**

(22) Date of filing: **27.02.2002**

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

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(54) Telescopic structure for shelters and the like

(57) A housing system comprising a structure (4) provided with a roof region (6) and respective side walls (7), characterized in that it comprises lifting means (2) thereof, telescopic and made integral to a containing structure (1) thereof.

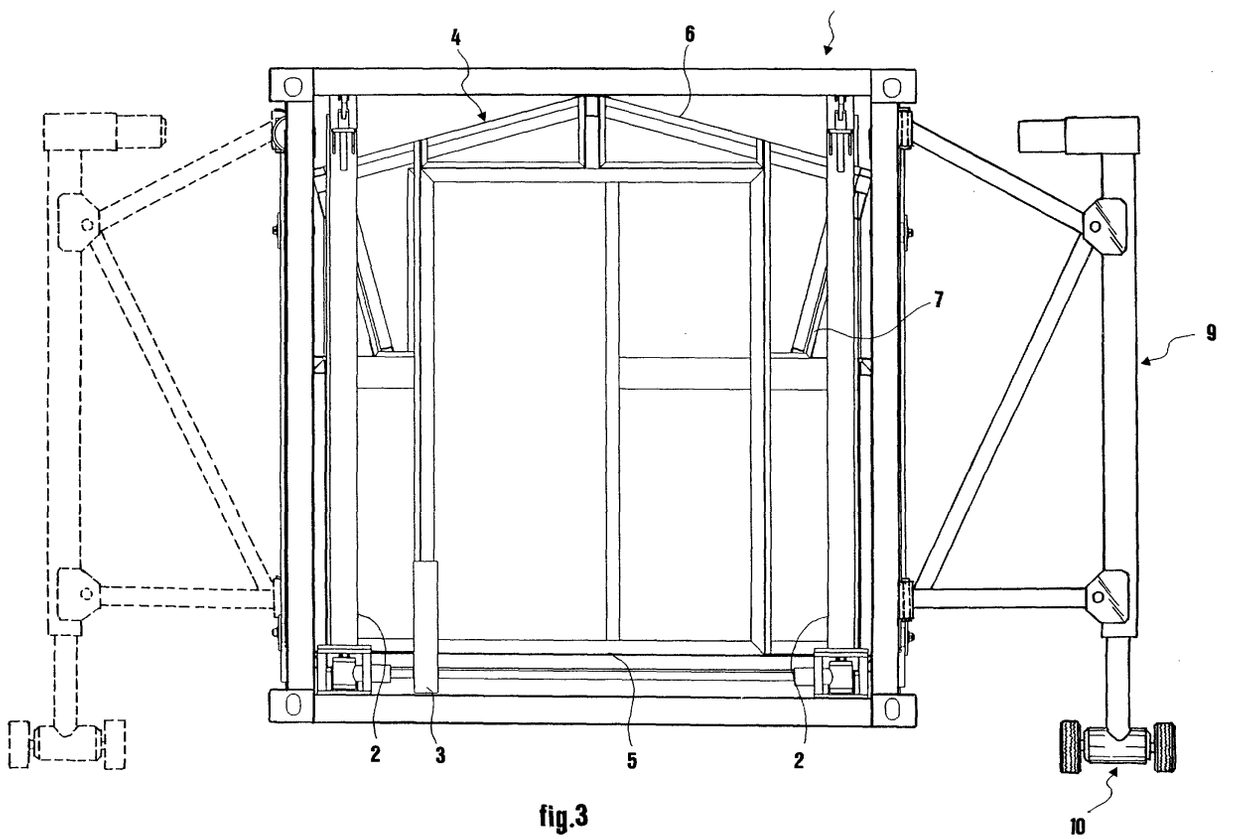

fig.3

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Description

[0001] The present invention refers to a housing system mounted onto a telescopic structure for containers or shelters, and to the related container or shelter incorporating this system.

[0002] The so-called "containers" widely utilized to transport goods or material are already known, which are parallelepiped-shaped and are typically manufactured with metallic material. In order to enter the inside thereof at least one access port is provided. The sizes and overall dimensions of said containers are subject to standards, in particular to the ISO standards so as to make the transport and the handling thereof standardized.

[0003] Typically, for their handling, lifters or cranes are necessary, apt to place said containers onto the transporting vehicle or to store the same in a stacked manner. Therefore, there is a disadvantage linked to the fact that it is always necessary to provide a helping structure both to lift and position the container and for the loading and the unloading to and from the transporting vehicle.

[0004] Furthermore, the so-called "shelters" are already known as well, as structures directly derived from said container and for the deployment under extreme climatic conditions. Such types of "shelters" are mainly used for military purposes and one of their fundamental requirements is the transportability thereof on aircrafts.

[0005] Hence, similarly to the containers, there is a disadvantage of having to provide lifting and handling means for moving the "shelters" from the land vehicle towards the aircraft. In fact, typically this occurs by means of a lifting trolley and a roller platform, the last for positioning and inserting the "shelter" inside the aircraft and being blocked therein.

[0006] Moreover, in the field of military operations, it is necessary to implement airports on cleared grounds apt to rapidly deploy means and materials, as well as troops. To this end, a ground-elevated structure is required for the housing of air traffic control personnel and units. Typically, Engineer Corps personnel erect this control structure on site. Hence, there is the dire need to deploy a housing structure for air traffic control in the shortest possible time.

[0007] Therefore, it is an object of the present invention to solve said disadvantages providing a housing system mounted on a telescopic structure located inside of a container or "shelter" and the related container incorporating this device. Thereby, the structure housing air traffic control units or the like is ground-deployed rapidly and so as to render the same self-portable.

[0008] Another object is to provide a housing system mounted on a telescopic structure for container or "shelter" and the related container incorporating this system, which provides a perfect integration thereof with the relevant container. Said system does not modify the outside dimensions thereof and, therefore, maintains the compatibility thereof with the already existing structures, also ensuring the transportability thereof onto vehicles and transport aircrafts.

[0009] A further object of the present invention is to provide a container or "shelter" which incorporates the subject telescopic housing system.

[0010] Therefore, according to the present invention a housing system is provided comprising a structure having a roof region and respective side walls,

characterized in that it comprises telescopic lifting means made integral to a containing structure thereof like a shelter or a container.

[0011] A detailed description of a preferred embodiment of the present invention will be now provided, given by way of example and not for limitative purposes, by referring to the attached drawings, wherein:

Fig. 1 is a perspective view, from the top, of a shelter incorporating the system of the present invention;
Fig. 2 is a perspective view, from the top, of the shelter of Fig. 1 in an operating condition;
Fig. 3 is an elevational side view of the shelter of figure 1 in a quiescent condition; and
Figs. 4A-4D are schematic illustrations of the loading and unloading procedures of the shelter of figure 1 from a ground vehicle as well as from an aircraft.

[0012] By now referring to figure 1, according to the present invention a shelter 1 is provided, having a parallelepiped structure according to the standards and as already known to the art. For clarity's sake, it has now to be noted that in the figures the shelter 1 is shown without containing walls so as to make apparent the devices internal thereto.

[0013] At each of the four corner regions of the shelter 1 it is internally located a telescopic lifting device 2 of the type having a cable and a pulley integral to a telescopic column (made apparent hereinafter). A power supply 3 of the lifting device is provided at the basis thereof housed internally to the shelter 1. Moreover, it has now to be noted that the four lifting devices 2 are synchronized thereamong according to a per se already known technology.

[0014] On the other hand, the lifting devices are connected to a housing structure 4 which provides a platform 5 joining the same lifting devices 2 and onto which the same housing structure 4 is mounted. The latter is typically provided with a roof section 6 and side walls 7 provided with windows or the like.

[0015] Moreover, as it is apparent from Fig. 2, there are provided ladders 8 for accessing the structure 4 once the latter has been telescopically extracted from the shelter 1. It has now to be noted that the ladders 8 could be made hinged to the overall structure or removable and contained into the shelter 1 during the transport of the latter.

[0016] On the other hand, the shelter 1 is provided with a device 9 for lifting the shelter 1, mounted at each corner thereof. The four lifting devices 9 are hingedly

mounted on respective rotatable supports integral to the shelter 1. Moreover, each lifting device 9 has at the free end thereof a pair of driving wheels 10 apt to shift the shelter 1 and powered by hydraulic, or alternatively by electric motor. Needwise, the lifting devices 9 and the driving wheels 10 could be powered by means of power units remote or contained inside of the shelter 1.

[0017] It has to be specified that the technology related to the implementation and to the control of the lifting devices 9 and 10 of the shelter 1 is the subject of the European Patent Application N° 830686.2 filed by the same applicant. Therefore, a detailed description of said devices will be here omitted, since already provided therein.

[0018] Anyhow, with specific reference to Fig. 3, it should be noted that the location of the lifting devices 9 with the related driving wheels 10 is such that the former, when retracted, are completely contained within the shape of the shelter 1, thereby abiding by the norms. As it is apparent from the Figs., the lifting device 9 can be extracted from the hollow housing region in the shelter 1, by rotating the same onto its rotatable support, carrying out a rotation of about 90°.

[0019] Moreover, needwise, in the same shelter 1 there may be obtained suitable seats or housing regions for the devices 9, so shaped as to enable the telescopic elongation of the latter even in a retracted or partially extracted position without interfering with the shapes of the shelter 1.

[0020] By now referring to Figs. 4A to 4D, the operation of the lifting devices 9, 10 for the self-loading of the shelter 1 to/from a vehicle/aircraft according to the present invention is illustrated therein.

[0021] According to the invention, for the self-loading of the shelter 1, at first the four lifting devices 9 are extracted from their seats to be then driven so as to lift the shelter 1 from the ground to a pre-established height. Then, it is possible to make the loading platform of a motor vehicle 11 to pass under the shelter 1 and between the so-extracted lifting devices 9.

[0022] At this point, it is possible to activate again the devices 9 to allow the shelter 1 to position onto the motor vehicle 11 and, therefore, to be locked thereon. The shelter 1 may thus be transported by the motor vehicle 6. By referring to the Figs., to unload the shelter 1 from the motor vehicle 11, firstly the devices 9 are extracted from their seats and then driven until lifting the shelter 1 from the loading platform of the motor vehicle 11. At this point, the motor vehicle 11 is free to move away from the shelter 1 placed in this way on the ground. It has now to be noted that the shelter 1, it being provided with driving wheels 10, is free to move in this condition with no aid from auxiliary handling means.

[0023] Moreover, always in the condition in which the shelter 1 rests on the ground yet it is lifted therefrom, activating the driving wheels 10 it can suitably be self-loaded on a transporting aircraft in a condition in which the devices 9 be retracted in the shape of the former, yet telescopically extracted on the ground.

[0024] In fact, as it is apparent from the Figs., for loading the shelter 1 on the aircraft, firstly it is brought (in a self- or helped way) near the loading ramp of the aircraft. At this point, the shelter 1 may board on its own onto the loading ramp of the aircraft by means of the mobility of the wheels 10 as well as the telescopicity of the lifting devices 9, so as to enable entering the aircraft.

[0025] Once reached the inner area of the aircraft, the shelter 1 can be blocked therein actuating again the lifting devices 9 until the same be fully retracted inside their seats in the shelter 1. To unload the shelter 1 from the aircraft, the procedure opposite to the one described for loading the same on the aircraft will be followed.

[0026] It has now to be noted that the present invention has several advantages.

[0027] A first advantage lies in that the present invention provides a shelter 1 or container provided with a housing structure 4 mounted thereon so as to enable a practical and swift ground-deployment of air traffic control units or the like.

[0028] Another advantage lies in that, differently from the state of the art, the housing structure 4 for optional air traffic control units, being made integral to the shelter 1 of the present invention is made self-portable and easily deployable.

[0029] A third advantage lies in that the housing structure 4 made integral to the shelter 1 of the present invention does not interfere with the standards' typical interface features of the container or shelter onto which it is mounted. Therefore, the container or shelter of the present invention may be handled with the modes and equipment provided in the international field without any limitation and for all transport modes, i.e., ships, railway, transport civilian aircraft, transport military aircraft.

Claims

1. A housing system comprising a structure (4) provided with a roof region (6) and respective side walls (7),

   characterized in that it comprises telescopic lifting means (2) made integral to a containing structure (1) thereof.

2. The housing system according to the preceding claim, wherein said lifting means comprises four telescopic actuators (2) located at respective four corners of the structure (4) and made integral to the latter.

3. The housing system according to claim 1 or 2, further comprising at least one power supply (3) of said actuators (2) contained inside said containing structure (1) .

4. The housing system according to claim 1 or 2 or 3,

further comprising a lifting system (9) on/from a transporting means of said containing structure (1) to which it is associated.

5. The housing system according to claim 4, wherein said lifting system comprises four lifting devices (9) hingedly mounted on said containing structure (1).

6. The housing system according to claim 4 or 5, further comprising a self-loading system (10) on/from a transporting means of said containing structure (1) to which it is associated.

7. The housing system according to claim 6, wherein said self-loading system comprises four pairs of driving wheels (10), each pair of wheels (10) being located on a respective lifting device (9).

8. A container (1) or the like, **characterized in that** it contains the housing system according to the preceding claims.

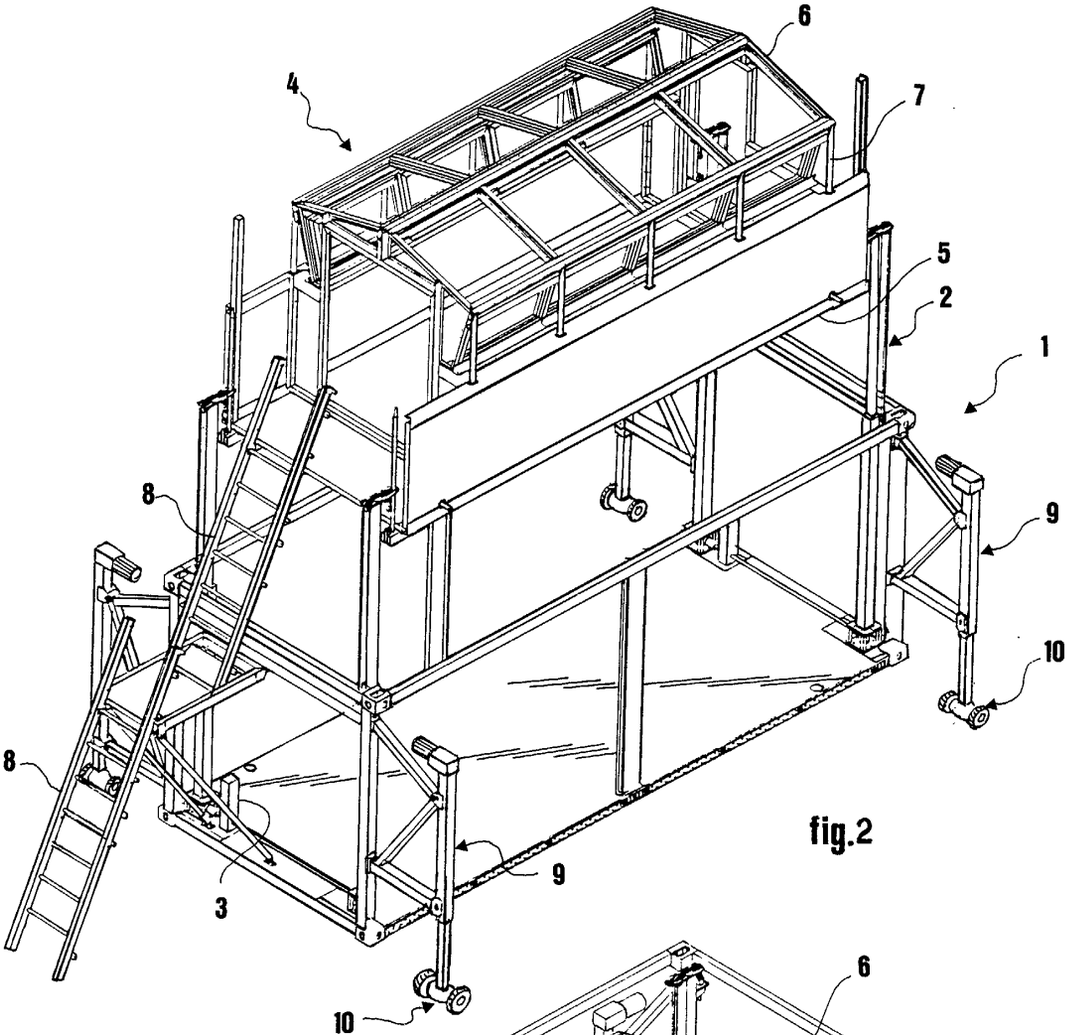

fig.2

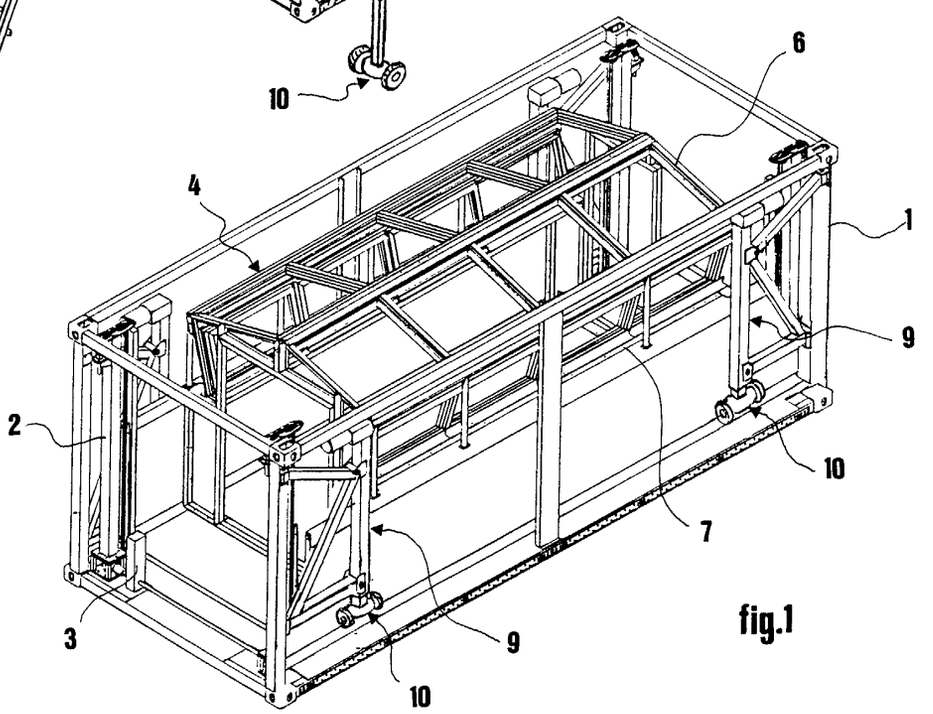

fig.1

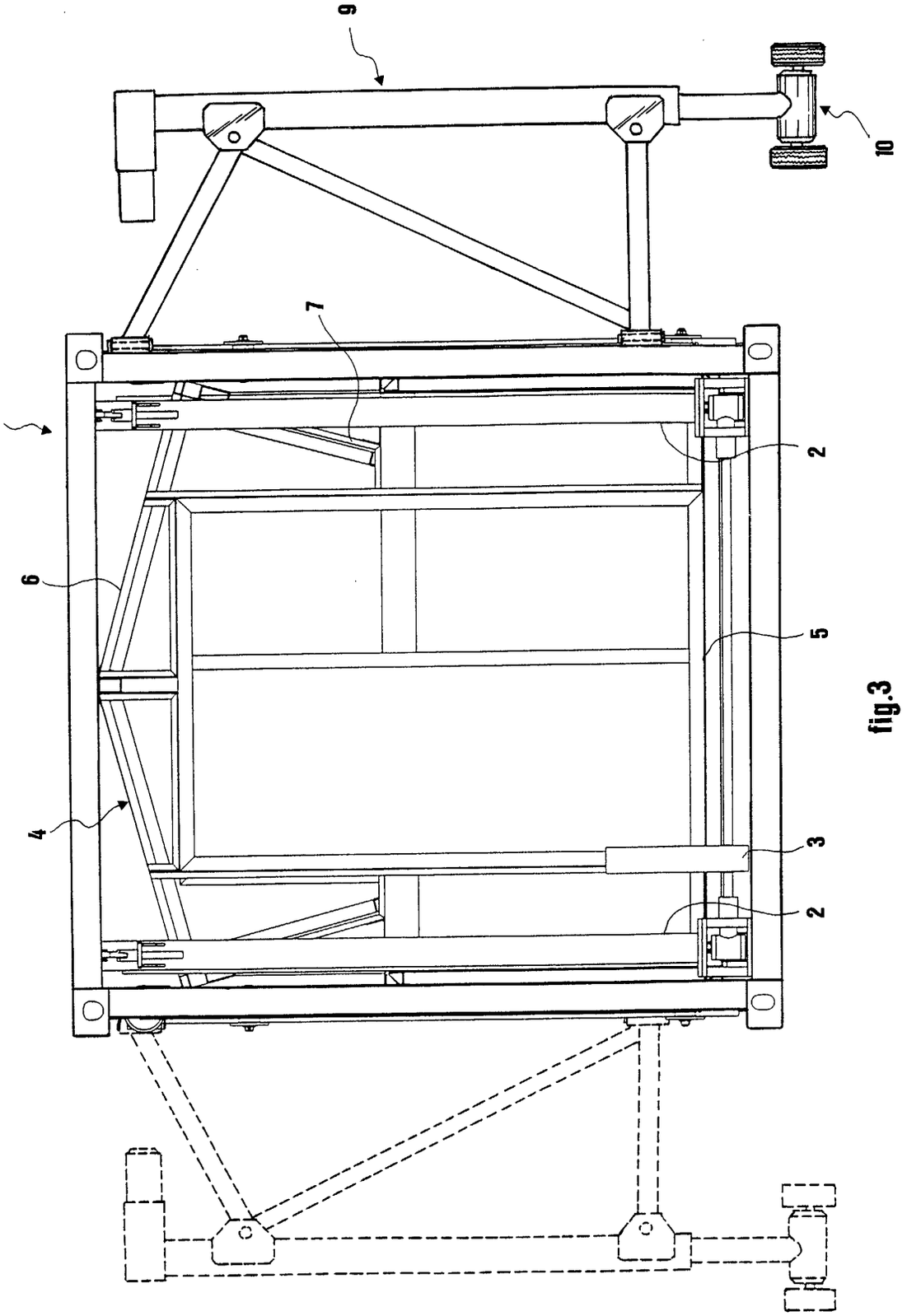

fig.3

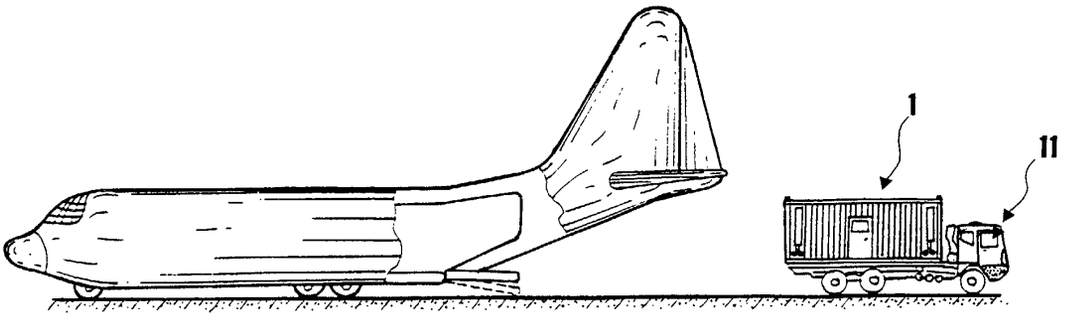

fig.4a

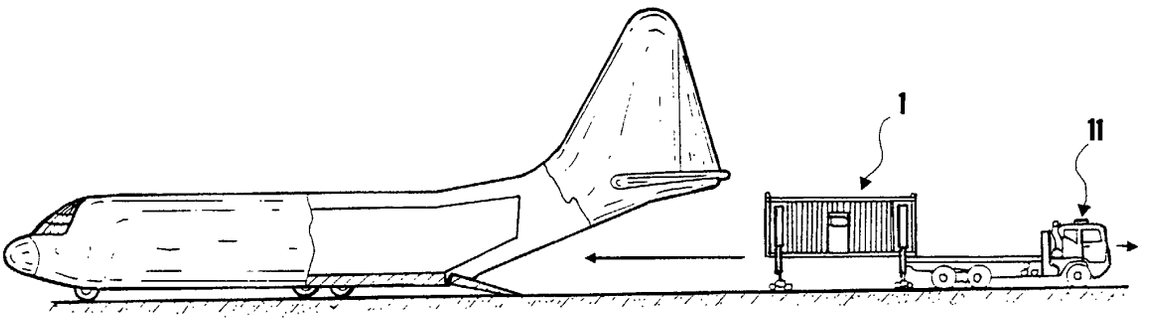

fig.4b

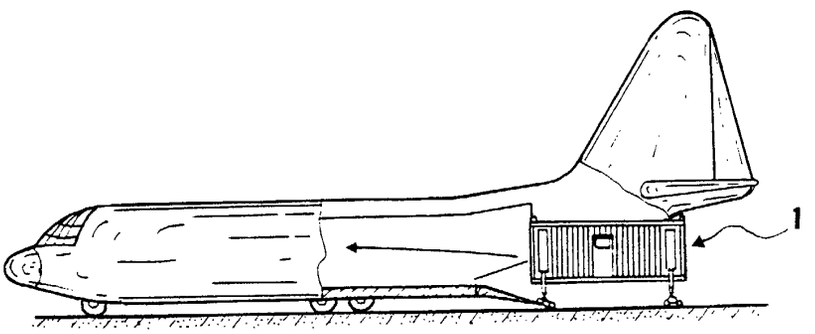

fig.4c

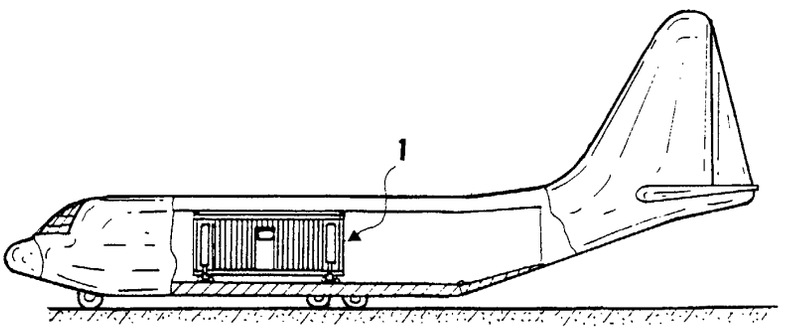

fig.4d

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EUROPEAN SEARCH REPORT

Application Number
EP 02 42 5104

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y A	US 4 425 978 A (STAR LEON D) 17 January 1984 (1984-01-17) * column 4, line 1 - line 55; figure 4 *	3,7 1	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 July 2002	Fordham, A

CATEGORY OF CITED DOCUMENTS

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