



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.03.2014 Bulletin 2014/12

(51) Int Cl.:
E01F 13/02 (2006.01)

(21) Application number: **12184545.7**

(22) Date of filing: **14.09.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventor: **Hofland, Jacobus Maria Josef**
1842 EE Oterleek (NL)

(74) Representative: **Nederlandsch Octrooibureau**
P.O. Box 29720
2502 LS The Hague (NL)

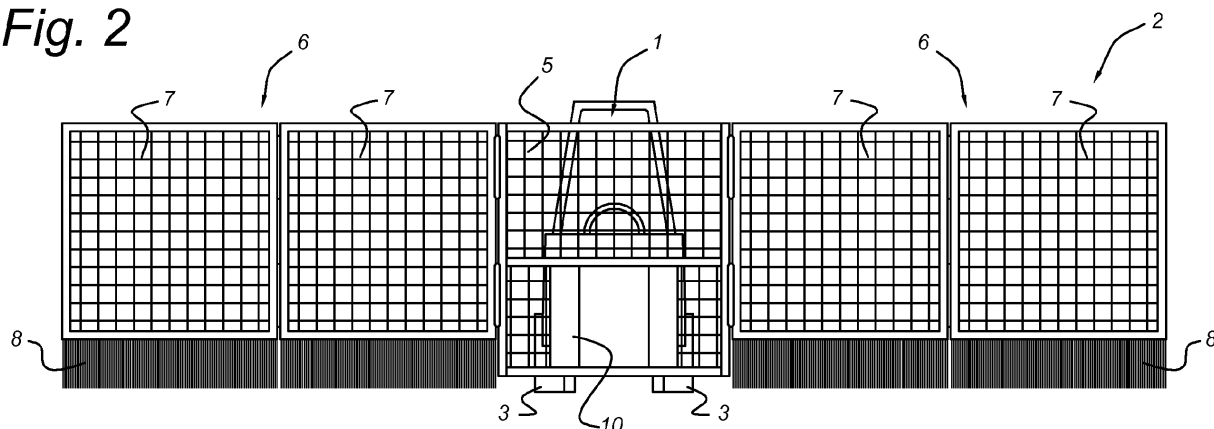
(71) Applicant: **Hofland, Jacobus Maria Josef**
1842 EE Oterleek (NL)

(54) **Mobile barrier system**

(57) A mobile barrier system comprises a vehicle having a chassis, which is provided with wheels, as well as a barrier, which is coupled to the vehicle and can be transferred between a folded state and an unfolded state. This vehicle is realized as a motor vehicle having an integrated motor, a drive line between motor and wheels,

and having one or more steerable wheels. Such a barrier can be quickly and easily displaced, such that a flexible deployment is made possible. In particular in the guidance of crowds of people, or the controlling of disturbances, the high mobility of the barrier system is an important advantage.

Fig. 2



Description

[0001] The invention relates to a mobile barrier system, comprising a vehicle having a chassis, which is provided with wheels, as well as a barrier, which is coupled to the vehicle and can be transferred between a folded state and an unfolded state.

[0002] A barrier system of this type is known from WO-A-2010/046651. The barrier is here placed on a trailer. It is hereby intended to drive the barrier to a specific location. In this context, it is necessary to couple the trailer to a towing vehicle, which can drive the trailer with barrier into the desired position. Having arrived there, the trailer must be manoeuvred into the correct position, whether by the towing vehicle or otherwise. Once the trailer is installed, it must be stabilized. After this, the barrier can be unfolded and the stabilizers turned out.

[0003] Such a procedure is laborious. Not only does the installation of the barrier cost a great deal of time and possible manual effort, but once installed the barrier system is no longer mobile. This means that there is no possibility of reacting to changing circumstances, such as shifting crowds of people. The folding in of the stabilizers and the barrier would cost so much time that the user would constantly lag behind. In fact, the known barrier system does not form much more than a stationary barrier, as known, for example, from BE-A-1016088.

[0004] The object of the invention is hence to provide a barrier system having a high degree of mobility, in the sense that the device can be moved quickly and without manual effort from one point of deployment to the other. This object is achieved by virtue of the fact that the vehicle is realized as a motor vehicle having an integrated motor, a drive line between motor and wheels, and having a steering mechanism.

[0005] The barrier system according to the invention has its own drive and steering mechanism, whereby this is extremely manoeuvrable and rapidly deployable. Such an embodiment also has the advantage that a quick and easy change of deployment location can be made. It costs little time to fold in the barrier; directly afterwards, the system can be transported to another location. A better response can thus be made to the movement of larger public crowds. The mobile barrier with outwardly projecting barrier can also be shifted, whereby a multitude of people can be forced in a certain desired direction. If needs be, the barrier can here be adapted to the available width of the route to be covered. The barrier can also be raised to move over obstacles and the like. The barrier can also be raised asymmetrically, if necessary. That is to say that that portion of the barrier which projects on one side of the vehicle can be raised over a different height from that portion of the barrier which projects on the other side of the vehicle. The barrier can also be projected asymmetrically if this is necessary in view of the available space.

[0006] The barrier system can additionally also be used to directly and effectively close off roads to other

traffic, such as to other motor vehicles. This can be of benefit in connection with traffic controls, road works, or the marking out of access roads to squares and sites where festivities are taking place. The barrier system here also offers the possibility of selective admission of traffic and persons. If necessary, a plurality of barrier systems according to the invention can also be used side by side to provide a relatively wide barrier; moreover, a wide barrier of this type, consisting of a plurality of adjacent barrier systems, can be driven one beside the other to a specific place.

[0007] In particular, the advantage here arises that the barrier can be easily equipped with operating means for transferring the barrier between the folded and the unfolded state thereof. Such operating means for the barrier system can namely be coupled to the motor of the motor vehicle. The unfolding and folding-in of the barrier can thus be carried out even without manual labour.

[0008] Preferably, the motor vehicle comprises a hydraulic installation which can be energized by the motor of the motor vehicle; in that case, the barrier can also possess operating means which are coupled to the hydraulic installation. The motor of the motor vehicle can be an internal combustion engine, such as a diesel engine. It is also possible, however, to use an electric motor with battery pack; in that case, the operating means of the barrier can also be made electrical.

[0009] The barrier is preferably articulated. The barrier can comprise a central mounting, which is coupled to the motor vehicle, as well as wings at opposite ends of the mounting. The wings can each be articulated and can comprise, for example, two or more wing parts. Preferably, the barrier comprises a fencing. This fencing can be made up of topmost rigid parts and accompanying bottommost flexible parts, such as parts made of spring steel. The flexible parts make it possible to shift the barrier over low obstacles. The barrier can remain free from the ground. The clearance between the barrier and the ground can be adjustable. This clearance is chosen such that persons cannot crawl through beneath the barrier.

[0010] The vehicle can be realized in a variety of ways. According to a first option, this is a wheeled vehicle having wheels supported directly on the ground, wherein the steering mechanism comprises one or more steerable wheels rotatably suspended from the chassis. By the rotatability of the steerable wheels is understood the rotatability about a vertical or obliquely directed axis, such as the axis of a steering swivel pin.

[0011] It is not necessary, however, to use steerable wheels of this type. According to another option, the chassis can be articulated, in which case the wheels are not themselves suspended in a steerable or rotatable manner from the frame. The steering mechanism is then constructed for the rotation of the articulated parts of the chassis with respect to one another.

[0012] According to a further alternative, wheels can be provided with caterpillar tracks. In that case, the steering mechanism can be constructed to drive the caterpillar

tracks at different speeds. Combinations of such variants are also possible, such as a chassis with wheels provided with caterpillar tracks, and wheels which rest directly on the ground, in particular steerable wheels.

[0013] The motor vehicle can be a forklift truck, in which case the barrier is coupled to the lifting installation of the forklift truck. As an alternative, the motor vehicle can be a tractor, such as an agricultural tractor. In addition, a truck or army /police vehicle can be used. The barrier can be detachably coupled to the motor vehicle. In this way, the barrier can also be used in standard motor vehicles which are not specially designed for the barrier system.

[0014] In addition, provisions are made to prevent persons from climbing over the barrier, such as projections, electric fence wire and the like.

[0015] The application will next be further explained with reference to an illustrative embodiment represented in the figures.

Figure 1 shows a top view of the mobile barrier system with unfolded barrier.

Figure 2 shows a front view.

Figure 3 shows a top view of the folded barrier.

Figure 4 shows a side view of the barrier system.

Figures 5-7 show different positions of the barrier in top view.

[0016] The barrier system represented in Figures 1 and 2 consists of the vehicle 1 and the barrier 2 suspended from that vehicle. The vehicle possesses a number of wheels 3 and a body 4. The barrier 2 consists of a central mounting 5, fixedly or removably connected to the vehicle 1, and the wings 6, hinge-suspended on either side thereof. These wings 6 are each articulated and, in the represented example, each consist of two mutually hinge-connected wing parts 7. Under each wing part is found a skirt 8 made of flexible material.

[0017] Figure 3 shows a top view of the folded barrier 2, wherein all wing parts are folded one against the other about the hinges 9. In the side view of Figure 4, the barrier 2 is shown suspended from the forklift 10 of the forklift truck. The barrier can thus be raised, whereby the possibilities of use thereof are still further increased. The barrier can thus be moved over specific obstacles, or placed above an elevated portion of the paving.

[0018] Figures 5-6 show various positions of the barrier, which can be assumed to be dependent on the desired application of the barrier system. These are just a few of the various settings of the barrier which can be chosen in dependence on the circumstances in which the barrier system is deployed. Thus it is also possible, for example, to place the free ends of both parts of the barrier one against the other, wherein a fencing, which is closed all the way round and forms a space for, for example, the temporary enclosure of a group of people, is produced.

List of reference symbols

[0019]

1. Vehicle
2. Barrier
3. Wheel
4. Body
5. Central mounting
6. Wing
7. Wing part
8. Skirt
9. Hinge
10. Forklift

Claims

1. Mobile barrier system, comprising a vehicle (1) having a chassis, which is provided with wheels (3), as well as a barrier (2), which is coupled to the vehicle and can be transferred between a drawn-in state with respect to the vehicle and an outwardly projecting state with respect to the vehicle, **characterized in that** the vehicle is realized as a motor vehicle having an integrated motor, a drive line between motor and wheels, and having a steering mechanism.
2. Barrier system according to Claim 1, wherein the barrier (2) is provided with operating means for transferring the barrier between the drawn-in and the outwardly projecting state thereof.
3. Barrier system according to Claim 2, wherein the operating means for the barrier system are coupled to the motor of the motor vehicle.
4. Barrier system according to Claim 3, wherein the motor vehicle (1) comprises a hydraulic installation which can be energized by the motor of the motor vehicle, and the barrier possesses hydraulic operating means which are coupled to the hydraulic installation.
5. Barrier system according to one of the preceding claims, wherein the motor of the motor vehicle is an internal combustion engine, such as a diesel engine.
6. Barrier system according to one of the preceding claims, wherein the barrier (2) is articulated.
7. Barrier system according to Claim 6, wherein the barrier (2) comprises a central mounting (8), which is coupled to the motor vehicle (1), as well as wings (6) at opposite ends of the mounting.
8. Barrier system according to Claim 7, wherein the wings (6) are each articulated and comprise, for ex-

ample, two or more wing parts (7).

9. Barrier system according to Claim 7 or 8, wherein the wings each possess their own operating means for the mutually independent transfer thereof between a, with respect to the vehicle, drawn-in state and a, with respect to the vehicle, outwardly projecting state.
10. Barrier system according to one of the preceding claims, wherein the barrier can be folded in and unfolded.
11. Barrier system according to one of the preceding claims, wherein the barrier is retractable and extendible.
12. Barrier system according to one of the preceding claims, wherein the barrier can be turned inwards and outwards.
13. Barrier system according to one of the preceding claims, wherein the barrier comprises a fencing.
14. Barrier system according to Claim 13, wherein the fencing is made up of topmost rigid parts (7) and accompanying bottommost flexible parts (8).
15. Barrier system according to one of the preceding claims, wherein the barrier (2) can be moved up and down with respect to the vehicle (1).
16. Barrier system according to Claim 15 if dependent on one of Claims 7-9, wherein the wings are each mutually adjustable in height.
17. Barrier system according to one of the preceding claims, wherein the barrier (2) is coupled to a lifting installation (10) of the motor vehicle, such as to the lifting installation of a forklift truck.
18. Barrier system according to one of Claims 1-16, wherein the barrier is detachably coupled to the motor vehicle.
19. Barrier system according to one of the preceding claims, wherein the barrier can be projected transversely to the longitudinal direction of the vehicle.
20. Barrier system according to one of the preceding claims, wherein the steering mechanism comprises wheels supported directly on the ground, of which one or more is steerable.
21. Barrier system according to one of the preceding claims, wherein the chassis is articulated and the steering mechanism is constructed for the rotation of the articulated parts with respect to one another.
22. Barrier system according to one of the preceding claims, wherein wheels are provided with caterpillar tracks.
23. Barrier system according to Claim 22, wherein the steering mechanism is constructed to drive the caterpillar tracks at different speeds.

Fig. 1

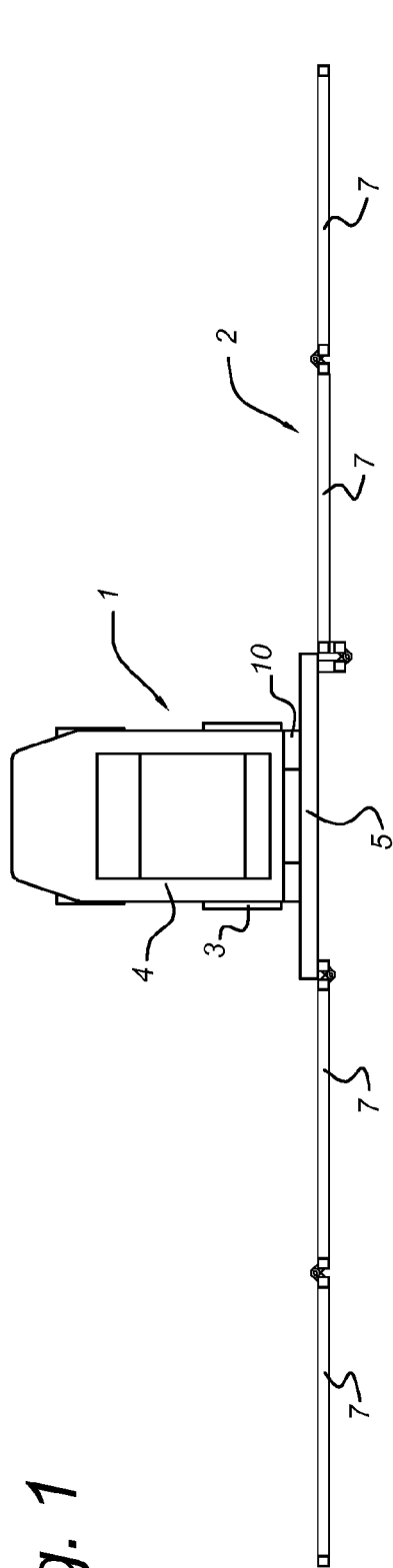


Fig. 2

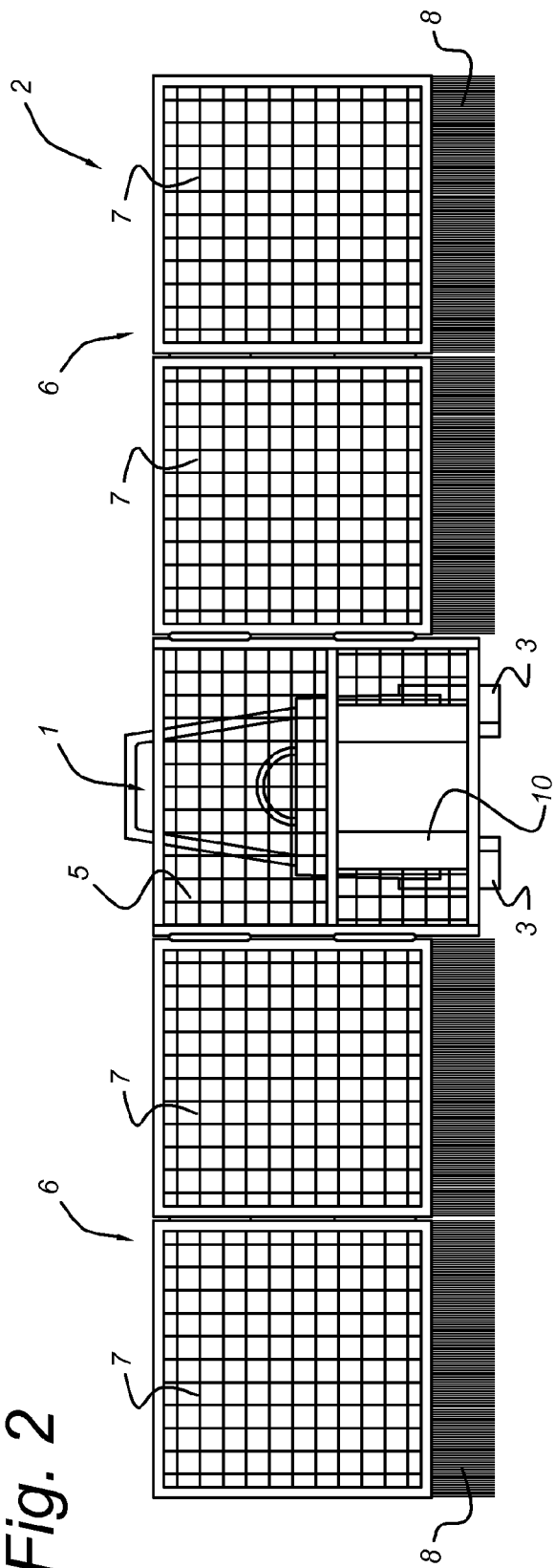


Fig. 3

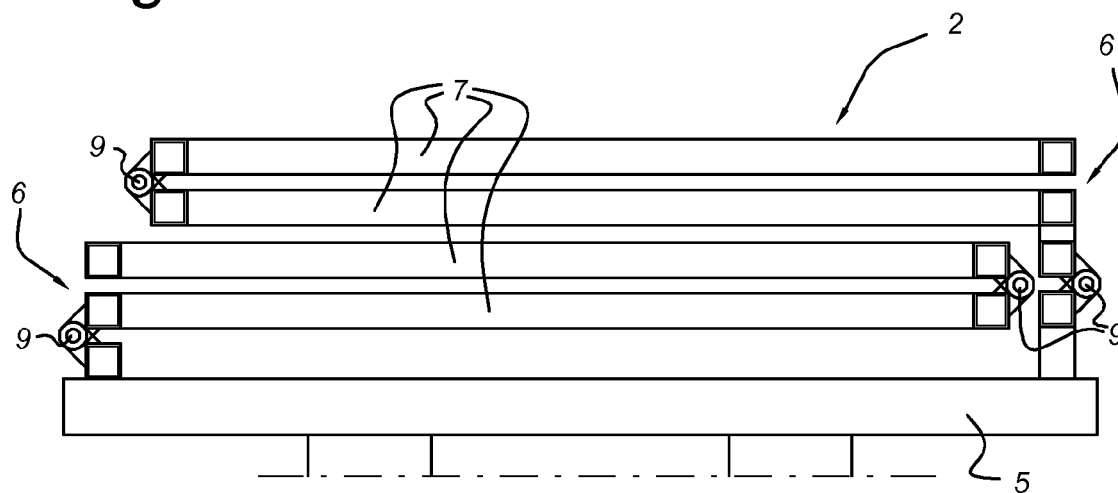


Fig. 4

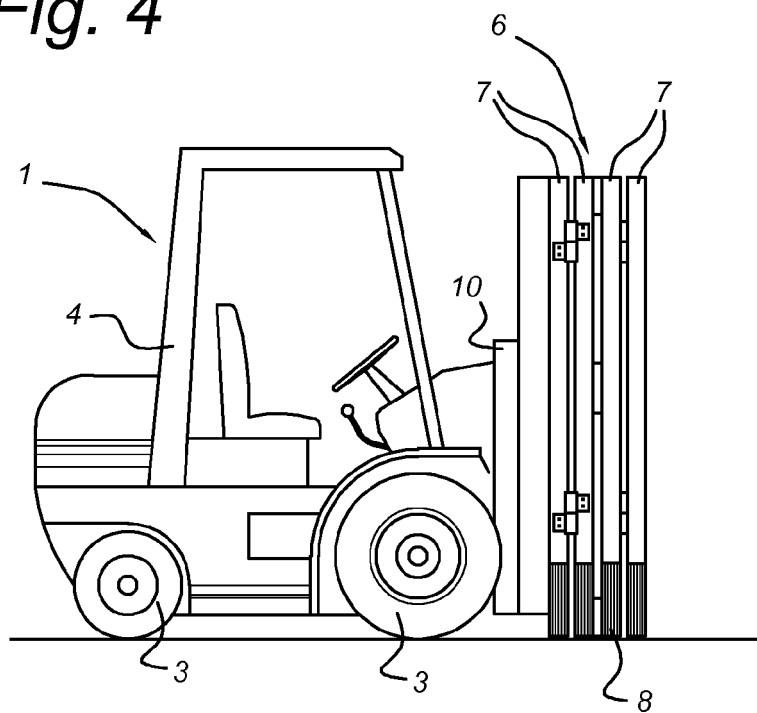


Fig. 5

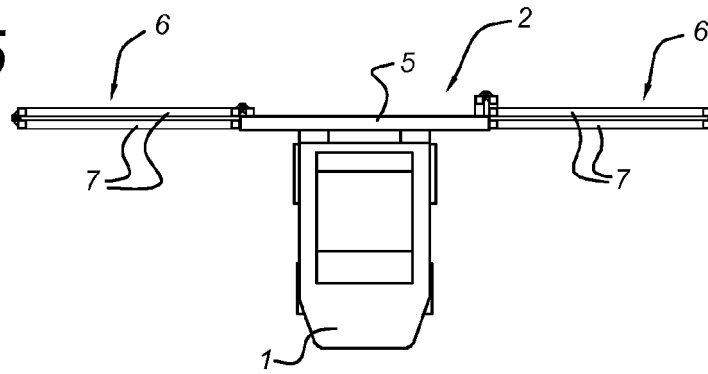


Fig. 6

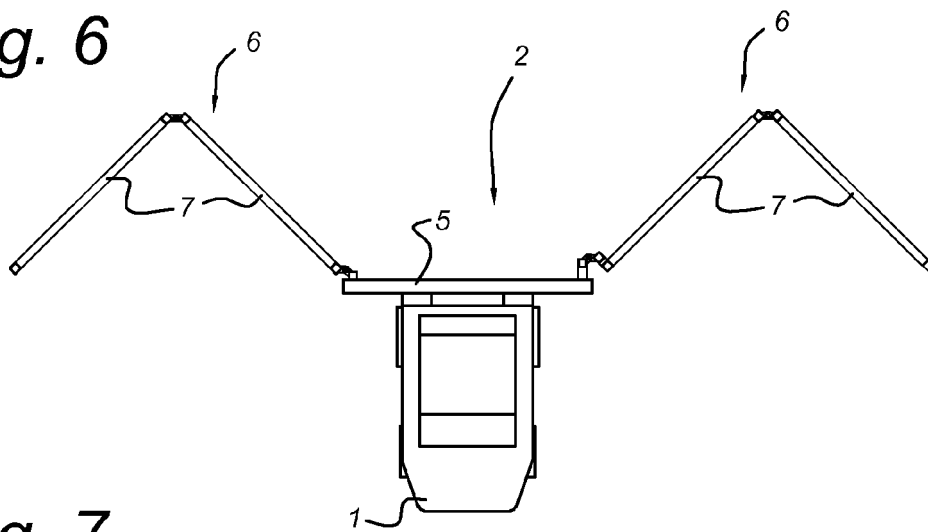
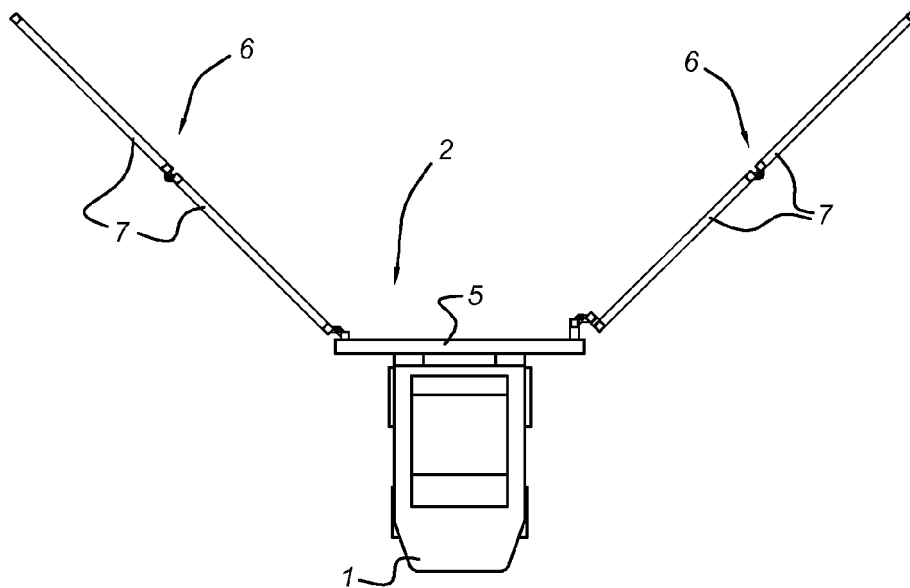


Fig. 7





EUROPEAN SEARCH REPORT

Application Number
EP 12 18 4545

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 911 885 A1 (FRANCE ETAT [FR]) 1 August 2008 (2008-08-01) * the whole document *	1-20	INV. E01F13/02
X	CN 101 736 709 A (BEIJING YONGDING PREC ELECTRIC BEIJING YONGDING PREC ELECTRIC FACTORY) 16 June 2010 (2010-06-16) * figures 1-5 *	1-13	
A	FR 2 926 759 A1 (CENTRAL LOGISTIQUE DE LA POLIC [FR]) 31 July 2009 (2009-07-31) * abstract; figures *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			E01F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 January 2013	Examiner Flores Hokkanen, P
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

1
EPO FORM 1503 03 82 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 18 4545

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-01-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2911885	A1	01-08-2008	NONE
-----	-----	-----	-----
CN 101736709	A	16-06-2010	NONE
-----	-----	-----	-----
FR 2926759	A1	31-07-2009	NONE
-----	-----	-----	-----

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2010046651 A [0002]
- BE 1016088 A [0003]