

(19)



(11)

EP 2 366 655 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

21.09.2011 Bulletin 2011/38

(51) Int Cl.:

B66F 11/04 (2006.01)

(21) Application number: **10156482.1**

(22) Date of filing: **15.03.2010**

(84) Designated Contracting States:

**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 SE SI SK SM TR**

Designated Extension States:

AL BA ME RS

(71) Applicant: **Altena, René**

7692 PE Marienberg (NL)

(72) Inventor: **Altena, René**

7692 PE Marienberg (NL)

(74) Representative: **'t Jong, Bastiaan Jacob**

Inaday B.V.

Hengelsestraat 141

7521 AA Enschede (NL)

(54) **Aerial work platform**

(57) The invention relates to an aerial work platform comprising:

- a base;
- lifting means arranged on the base; and
- a platform arranged on the lifting means, such that the platform can be lifted in vertical direction;

wherein the platform is tiltable.

Preferably the base of the aerial work platform comprises driving means for moving the base in at least one direction.

EP 2 366 655 A1

Description

[0001] The invention relates to an aerial work platform comprising:

- a base;
- lifting means arranged on the base; and
- a platform arranged on the lifting means, such that the platform can be lifted in vertical direction.

[0002] An aerial work platform is a mechanical device used to provide temporary access for people or equipment to inaccessible areas, usually at height. There are two distinct types of aerial work platforms which are also known as a "zoom boom" or "cherry picker"; or "scissor lift".

[0003] The cherry picker type of aerial work platform has generally a small bucket type platform at the end of an articulated arm, which is often telescopic. With the cherry picker type a person can easily be moved to different positions at different heights. Due to the bucket type platform it is however not suited to lift heavy loads.

[0004] The scissor type lift has generally a wider working platform, which is lifted by a scissor like mechanism. This lifting mechanism is only intended to move the platform in vertical direction. In order to provide a reasonable working area, without having to move the aerial work platform as a whole, the working platform is generally substantially larger, than for a cherry picker type. A further advantage of this type of aerial work platform, is that it is capable of lifting substantial larger weights.

[0005] For certain conditions a conventional aerial work platform is not very suitable, for example when arranging plates to an inclined ceiling. In living quarters for animals it is desired to have a smooth inner surface, such that the living quarters can easily be cleaned. In order to achieve such a smooth inner surface plates are arranged to the roof beams. The plates are generally long and heavy.

[0006] Lifting these ceiling plates with a conventional scissor type lift results in that the plate cannot be lifted high enough due to the inclination of the roof or that the ends of the plate cannot be reached from the platform without having to move the whole aerial work platform.

[0007] It is an object of the invention provide an aerial work platform, which does not have the above mentioned disadvantages.

[0008] This object is achieved by an aerial work platform, which is characterized in that the platform is tiltable.

[0009] As the platform of the aerial work platform according to the invention is tiltable, the platform can be arranged such that it is parallel to the work area, such as an inclined ceiling. As result it is possible to arrange for example a roof plate on the platform, lift the platform and near the ceiling tilt the platform such that workers can easily attach the roof plate to the inclined ceiling.

[0010] With the aerial platform according to the invention, it is now possible to provide an inclined working area

at height from which for example assembly tasks, renovation tasks and demolition tasks can be performed.

[0011] In a preferred embodiment of the aerial work platform according to the invention the base comprises driving means for moving the base in at least one direction. With the driving means it is possible to move the platform along a working area without having to lower the platform, step off, displace the work platform and climb up again.

[0012] In another embodiment of the aerial work platform according to the invention the platform is rotatable along a vertical axis parallel to the lifting direction of the lifting means. The rotation makes it possible to have the tilted platform in the most preferred position. The rotation also makes it possible to have the platform in a direction during transportation, which minimizes the width of the aerial work platform, such that it can easily go through narrow passages.

[0013] In another preferred embodiment of the aerial work platform according to the invention the platform is extendable in length. In this embodiment, the platform could for example be telescopic. This provides the possibility to enlarge the surface of the platform when it is lifted. In combination with a rotatable platform and a movable base, a large work area can be covered.

[0014] Preferably, the floor shape of the platform is rectangular. Furthermore, the tilt axis is parallel to the transverse direction of the floor shape.

[0015] In yet another embodiment of the aerial work platform according to the invention a railing is arranged on the platform. This provides safety for workers present on the platform.

[0016] The invention also relates to a method for arranging plates to an inclined roof, the method comprising the steps of:

- arranging at least one plate on a platform;
- lifting the platform to just below the ceiling of the inclined roof;
- tilting the platform such that the inclination of the platform is substantially equal to the inclination of the ceiling;
- arranging the plate to the ceiling.

[0017] These and other features of the invention will be elucidated in conjunction with the accompanying drawings.

Figure 1 shows a perspective view of an embodiment of the aerial work platform of invention.

Figure 2 shows a side view of a platform of the invention under an inclined roof in a lower position.

Figure 3 shows a side view of the platform of figure 2 in an upper position.

[0018] In figure 1 an embodiment of an aerial work platform 1 is shown. This aerial work platform 1 has a base 2 which is provided with tracks 3, 4. Lifting means are

arranged on top of the base. These lifting means comprise a base support 5, a scissor like mechanism 6 and a top support 7. The scissor like mechanism 6 is operated by a hydraulic cylinder 8. When the hydraulic cylinder 8 is operated it will push parts of the mechanism 6 away from each other, such that the scissor like mechanism 6 is extended in vertical direction and the top support 7 is lifted.

[0019] The base support 5 of the lifting means is rotatably arranged on the base 2. On the top support 7 a platform 9 is arranged. This platform 9 is provided on both ends with telescopic platform part 10, 11. Furthermore a railing 12 is arranged on the platform 9, 10, 11 to provide safety for the workers on the platform 9, 10, 11.

[0020] The platform 9, 10, 11 is arranged via a hinge axle 13 to the top support 7. This enables the platform 9, 10, 11 to tilt relative to the top support 7. A second hydraulic cylinder 14 is arranged between the platform 9, 10, 11 and the top support 7 to control the inclination of the platform 9, 10, 11.

[0021] Figures 2 and 3 show an embodiment of the method according to the invention and an application of the aerial work platform 1. The aerial work platform 1 is placed under the roof beams 15 of for example an animal living quarters. These roof beams 15 are inclined.

[0022] The aerial work platform 1 is driven by the tracks 3, 4 under the roof beams 15. The base 5 is then rotated over 90 degrees, such that the platform 9, 10, 11 is transverse to the direction of movement of the aerial work platform 9, 10, 11.

[0023] The platform parts 10, 11 are extended from the main platform 9 such that a long working area is created. Then the platform 9, 10, 11 is tilted by the second hydraulic cylinder 14. As a result the end of the platform part 10 almost touches the ground 16, so that workers can easily walk on the platform 9, 10, 11 and place for example ceiling plates on the platform 9, 10, 11.

[0024] Then, the lifting means 5, 6, 7 are energized by the hydraulic cylinder 8 to lift the top support 6 and as a result lift the platform 9, 10, 11 to near the roof beams 15 (see also figure 3).

[0025] The workers on the platform 9, 10, 11 can now arrange a ceiling plate to the roof beams 15. Then the aerial work platform 1 can be moved parallel to the ceiling 15 to a position in which a next roof plate can be arranged to the roof beams 15.

[0026] As a result of the tiltable platform according to the invention it is now possible to provide a working area at a desired height and under a certain angle such that workers will be at a equal distance to for example the roof along the whole working area.

- lifting means arranged on the base; and
- a platform arranged on the lifting means, such that the platform can be lifted in vertical direction;

5 **characterized in that** the platform is tiltable.

2. Aerial work platform according to claim 1, wherein the base comprises driving means for moving the base in at least one direction.

10 3. Aerial work platform according to claim 1 or 2, wherein the platform is rotatable along a vertical axis parallel to the lifting direction of the lifting means.

15 4. Aerial work platform according to any of the preceding claims, wherein the platform is extendable in length.

20 5. Aerial work platform according to any of the preceding claims, wherein the floor shape of the platform is rectangular.

25 6. Aerial work platform according to claim 5, wherein the tilt axis is parallel to the transverse direction of the floor shape.

30 7. Aerial work platform according to any of the preceding claims, wherein a railing is arranged on the platform.

8. Method for arranging plates to an inclined roof, the method comprising the steps of:

- arranging at least one plate on a platform;
- lifting the platform to just below the ceiling of the inclined roof;
- tilting the platform such that the inclination of the platform is substantially equal to the inclination of the ceiling;
- arranging the plate to the ceiling.

Claims

1. Aerial work platform comprising:

- a base;

55

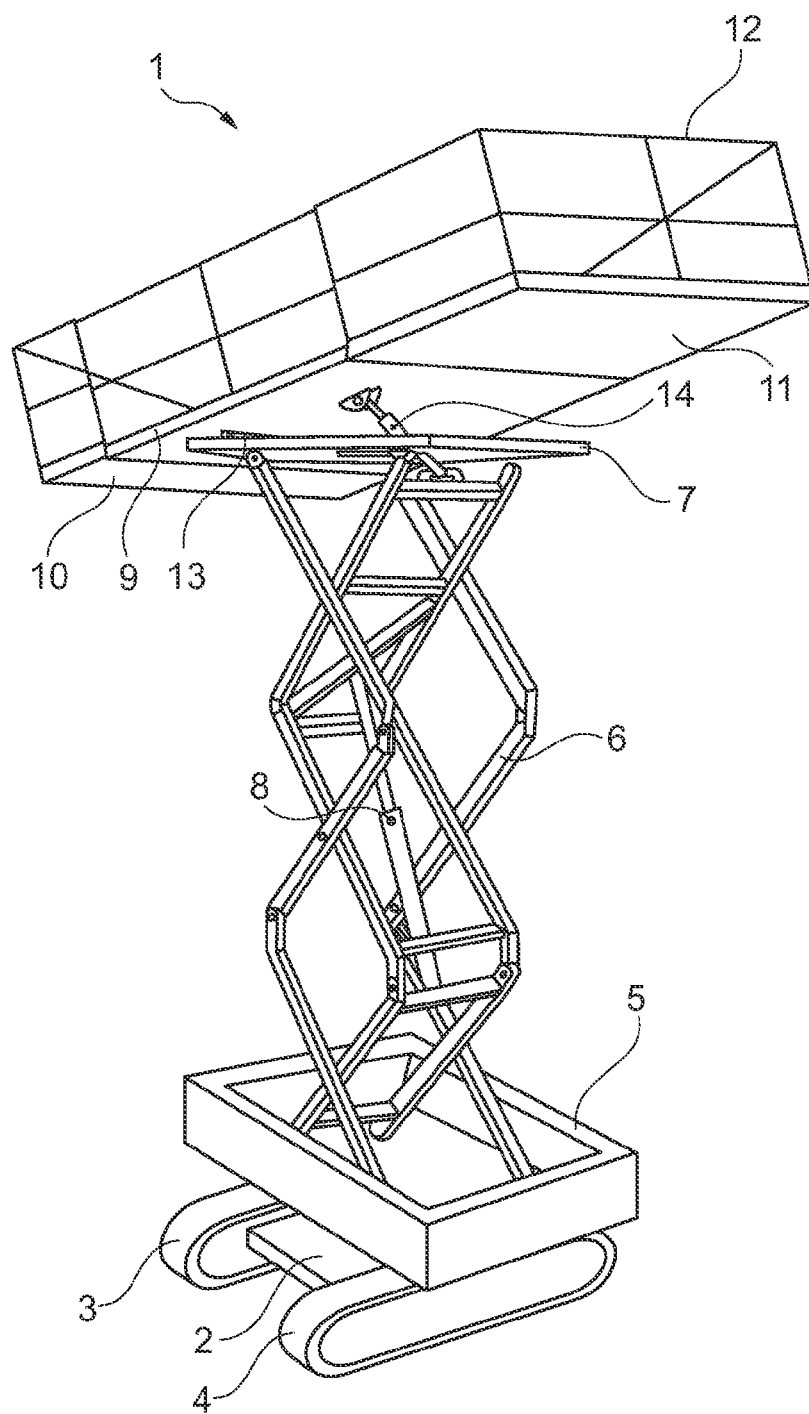
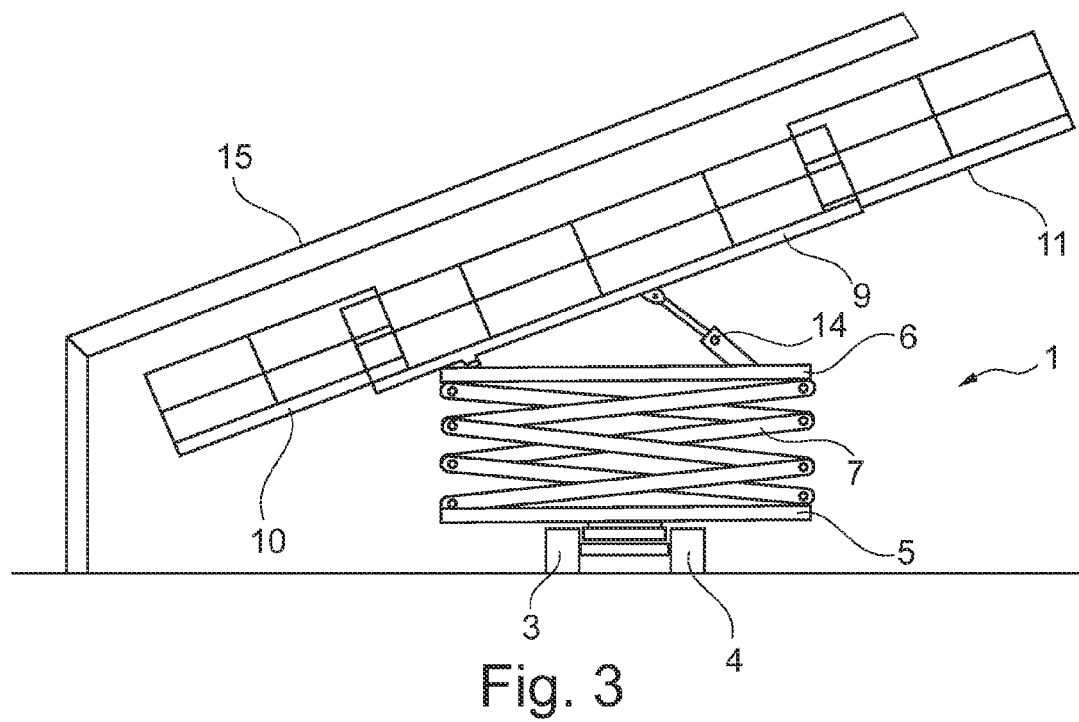
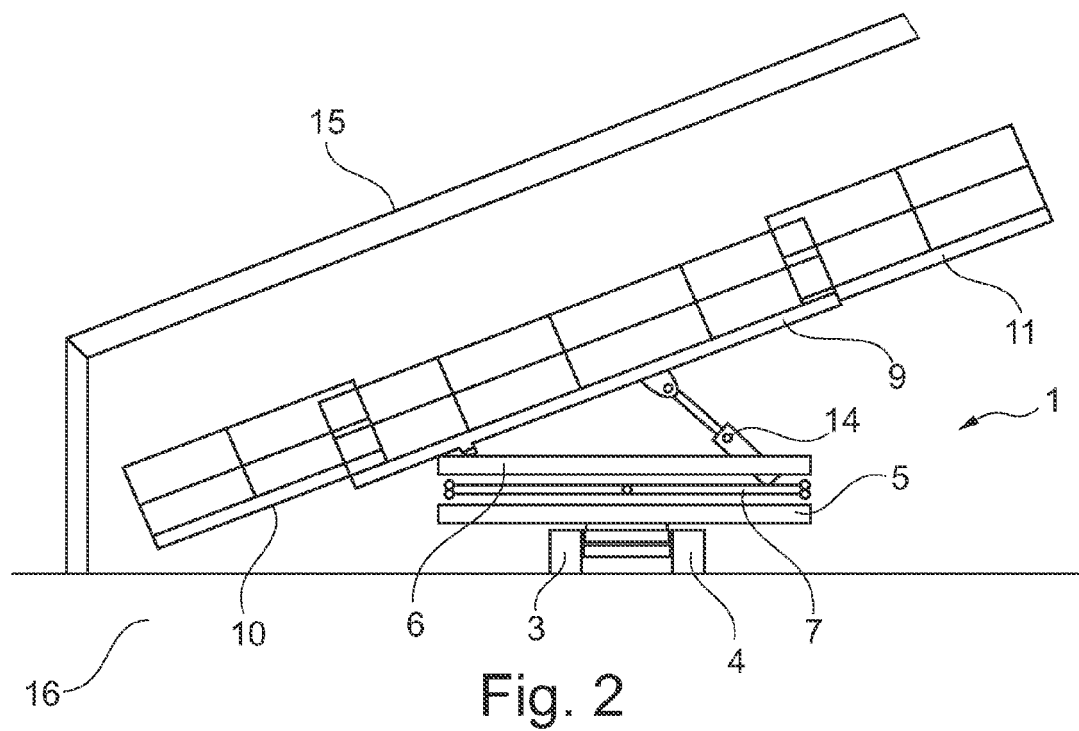


Fig. 1





Europäisches
Patentamt
European
Patent Office
Office européen
des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 10 15 6482

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	EP 0 281 044 A2 (HIKOMA SEISAKUSHO KK [JP]) 7 September 1988 (1988-09-07)	1-7	INV. B66F11/04
A	* abstract; figure 1 *	8	

X	EP 1 466 862 A1 (JENNISSEN GRUPPE GMBH [DE] PALFINGER EUROP GMBH [AT]) 13 October 2004 (2004-10-13)	1-7	
A	* abstract; figure 1 *	8	

A	WO 2006/120347 A1 (BARROSO JOSE [FR]) 16 November 2006 (2006-11-16)	1-8	
	* the whole document *		

A	KR 2009 0063626 A (WOO JONG KIL [KR]) 18 June 2009 (2009-06-18)	4	
	* abstract; figure 1 *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B66F E04G
Place of search		Date of completion of the search	Examiner
The Hague		11 August 2010	Faymann, L
CATEGORY OF CITED DOCUMENTS			
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		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	

2
EPO FORM 1503 03.82 (P04C01)

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

EP 10 15 6482

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.

11-08-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0281044	A2	07-09-1988	DE 3574862 D1 25-01-1990
			DE 3581415 D1 21-02-1991
			EP 0163430 A2 04-12-1985
			US 4638887 A 27-01-1987
EP 1466862	A1	13-10-2004	AT 318787 T 15-03-2006
WO 2006120347	A1	16-11-2006	FR 2885611 A1 17-11-2006
KR 20090063626	A	18-06-2009	NONE