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

(11) EP 1 795 671 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
13.06.2007 Bulletin 2007/24

(51) Int Cl.:
E04G 1/15 *(2006.01)* ***E04G 1/20*** *(2006.01)*

(21) Application number: **06025243.4**

(22) Date of filing: **06.12.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **06.12.2005 GB 0524930**

(71) Applicant: **Owens, Andrew Charles**
Birmingham
B5 6QL (GB)

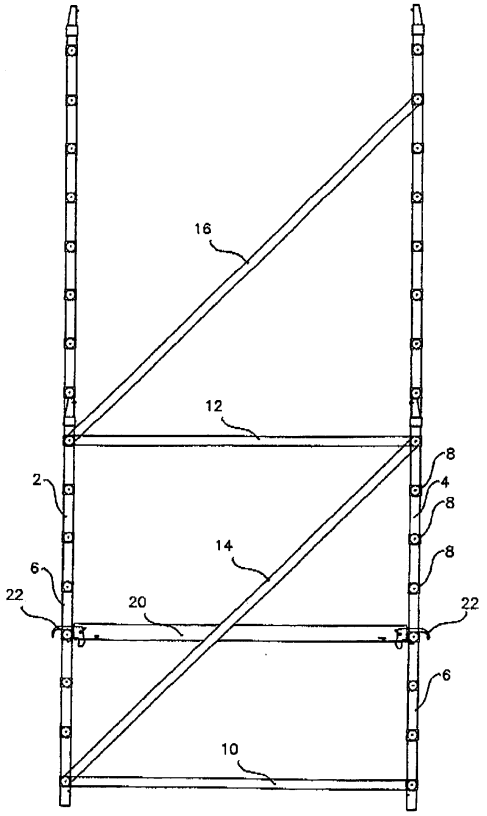
(72) Inventor: **Owens, Andrew Charles**
Birmingham
B5 6QL (GB)

(74) Representative: **Gregory, Timothy Mark**
TM Gregory & Co
Carlton House
26 Billing Road
Northampton
NN1 5AT (GB)

(54) Scaffolding platform with folding hooks

(57) The scaffolding platform system incorporates lockably rotateable attachment hooks (30). These hooks (30) enable a platform unit to be more easily relocated within the scaffolding structure. Intentional removal or repositioning of the platform is always possible, but accidental removal or displacement of the platform unit or disturbance by external forces such as wind forces is prevented.

FIG.1



EP 1 795 671 A1

Description

[0001] Scaffolding has long been used in industry for gaining access to high and awkward locations. Whilst scaffolding provides a safe environment for operatives to work this is not always the case for the persons erecting and dismantling scaffolding structures. Recent changes in legislation require that scaffolding erectors and dismantlers are provided with safety systems such as safety harnesses or platform units, which must include guardrail protection, at all times whilst erecting, altering and dismantling scaffolding.

[0002] In order to provide a safe method of work scaffolds often require extra temporary platforms to be installed whilst erecting the scaffolds. Whilst these platforms may be left in position whilst erection continues it is often necessary to move the platforms to new locations in the scaffold to enable erection to continue.

[0003] This invention relates to a platform system which incorporates attachment hooks which enable the platform units to be more easily relocated within the scaffolding structure. When used in conjunction with rapidly adjustable guardrail systems a totally enclosed safety platform and guardrail system is provided. The hooks on the platform unit are arranged such that accidental removal or displacement of the platform unit or disturbance by external forces such as wind forces is prevented, but whereby the intentional removal or repositioning of the platform unit remains unimpeded.

[0004] The invention will now be described with reference to the following drawings in which:-

Fig.1 shows a side elevation of a typical scaffolding tower;

Fig.2 shows a front elevation, side elevation and plan view of a typical platform assembly;

Fig.3 shows a partial side elevation of the folding hook connection; and

Fig.4 shows a side elevation of tower end frames and platform units during repositioning of the platform units.

[0005] The Invention is for use on scaffolding towers comprising scaffolding frames (2 & 4) which incorporate vertical frame members (6) and multiple, horizontal frame members (8) forming a ladder like structure. The scaffolding frames are connected together by horizontal members (10 & 12) and diagonal bracing members (14 & 16) such that the scaffolding forms a rigid rectangular framework.

[0006] Scaffolding platform units (20) are provided which may be releasably attached to the scaffolding horizontal frame members. The platform units may be positioned on any rung position to provide a level working platform.

[0007] The platform unit comprises side frame members (22), decking surface members (24 & 26), usually comprising of a flat anti-slip plywood member, and a trap-door panel (28) hingeably connected to one side frame member.

[0008] The platform incorporates hook devices (30) at each corner of the platform for the support of the platform unit at the desired position. The hook devices incorporate a jaw portion (32) with an upper hook portion (34) and a lower hook portion (36) an inclined face (38) a recessed portion (40) and a pivotal connection portion (42) enabling the hook members to be pivotally connected to the platform side members. A locking device (44) comprising of a. pivotally connecting portion (46) located into a. recessed portion in opposite frame side members and an engaging portion (48) which locates against the recessed hook portion (40) and hangs downwards with the engaging portion engaging within the recessed portion of the hook members. Additionally a spring device (50) may be incorporated at the pivotal connection point to cause the locking device to be forcibly engaged with the book member. In use the hook member is prevented from rotating past point 'D' since the recessed portion engages firmly against the engaging portion and which due to the relative positioning of the pivot points prevents the further rotation of me hook mechanism.

[0009] In use the locking device actively prevents the rotation of the hook members however, when the platform unit is required to be intentionally detached from the scaffolding frame rung members the locking device is rotated from position 'A' through position 'B' to position 'C' such that when one end of the platform unit is raised the hooks are free to rotate and become disengaged from the horizontal frame member. Further raising allows the hooks to hang downwards permitting the platform end to be raised past the frame members above. When the desired position is achieved the locking device is released which then applies a force by manual or spring action against the inclined face of the hooks causing the hooks to return to their original position permitting the hooks to be re-engaged onto the required horizontal frame member. Due to the elongate form of the upper hook portion the hooks may be engaged between frame members at differing levels and consequently different separating distances. To raise the opposite end of the platform unit the locking device at the opposite end of the platform unit may be disengaged and the other end of the platform may be raised to a level position.

[0010] Due to the simplicity of the locking device the platform may be adjusted from below using an elongate actuator or operated from above using pull cords connected to the locking mechanism and to the platform unit.

[0011] The sequential operation of the platform unit within a tower is now described as shown in. Fig. 4.

[0012] The platform unit is first placed on the tower at a convenient level. From a convenient position either above or below the platform unit the locking device at on end of the platform is released manually and simultaneously one end of the platform unit may then be raised to (position 1 or position 2) the hooks rotate downwards away from the horizontal member(s) immediately above

the hooks whereby further raising movement allows the hooks to pass the horizontal member(s).

[0013] After passing the horizontal member(s) the locking mechanism is released causing the books return to their original position and the platform hooks may then be located onto the horizontal frame member. This procedure is continued at opposite ends of the platform unit (position 3) until the desired height is reached and the platform unit is horizontal (position 4).

[0014] To prevent unintentional or unauthorised repositioning of the platform unit, the locking devices are automatically deployed which prevents the platforms from being raised and the books from being detached from the structure.

Claims

1. A scaffolding platform system **characterised in that** it comprises a platform unit, rotateable hook means 30 for supporting said platform unit and locking means manually releasable to permit intentional release of the platform unit, but adapted to permit reengagement of said hook means when the platform unit is repositioned.

2. A scaffolding platform system as claimed in claim 1, **characterised in that** the locking device comprises a biasing device.

3. A scaffolding platform system as claimed in claim 2, **characterised in that** the biasing device comprises coiled spring means.

4. A scaffolding platform system as claimed in any one of the preceding claims, further comprising guarding frame means to provide a fully guarded safety platform.

5. A scaffolding platform system as claimed in any one of the preceding claims, **characterised in that** it comprises a trap door to allow access to the platform from below.

6. A scaffolding platform system as claimed in any one of the preceding claims, **characterised in that** the platform unit is repositionable using an elongate operating actuator.

7. A scaffolding platform system as claimed in any one of the preceding claims, **characterised in that** the platform unit is repositionable using a pull cord actuated from above

8. A platform unit for use with a scaffolding platform system as claimed in any one of the preceding claims, incorporating hooks means so pivotably attached that, when the platform unit is raised, the book means rotates away from an obstructing horizontal frame member and, after passing the obstructing member, so re-deploy as to be locatable onto another frame member.

FIG.1

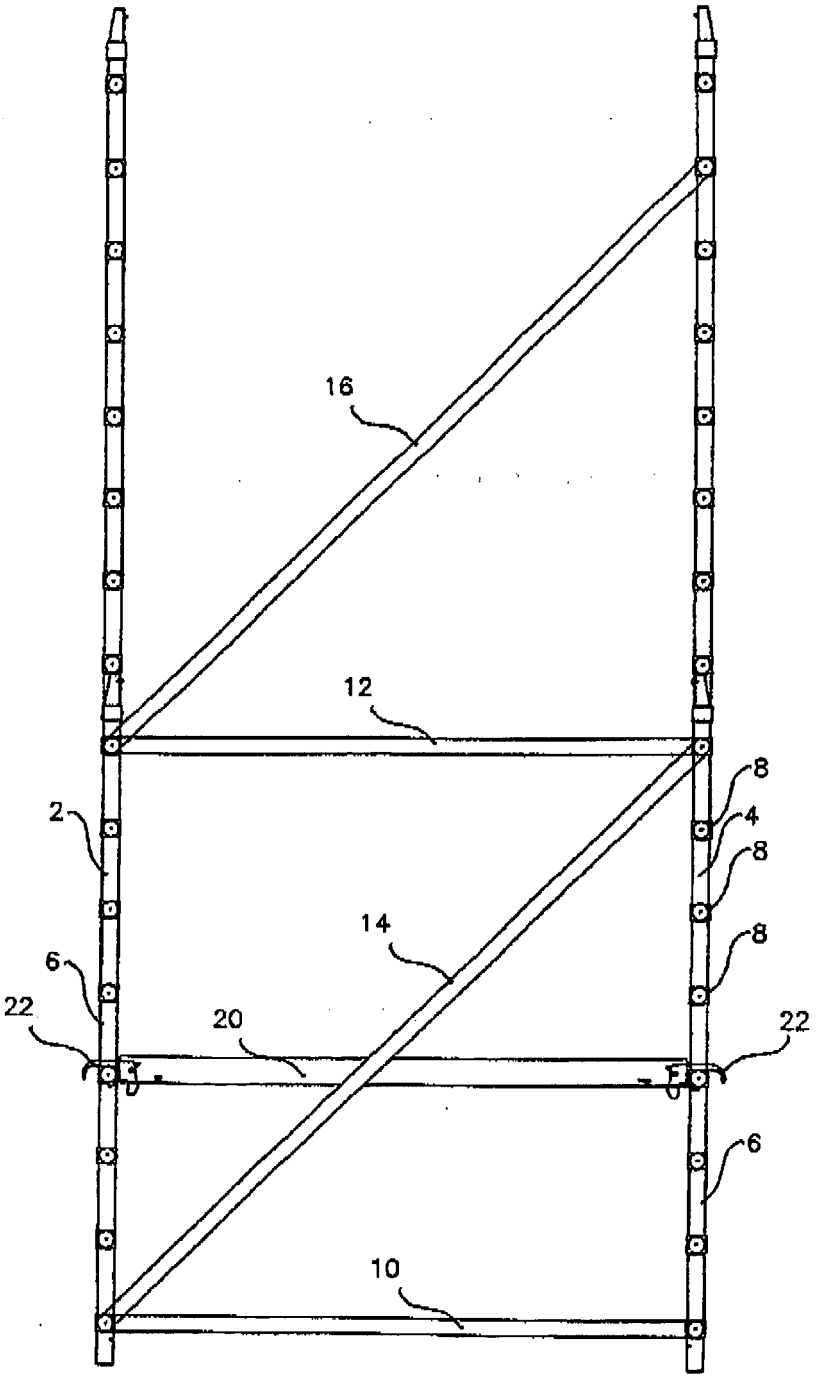


FIG.2

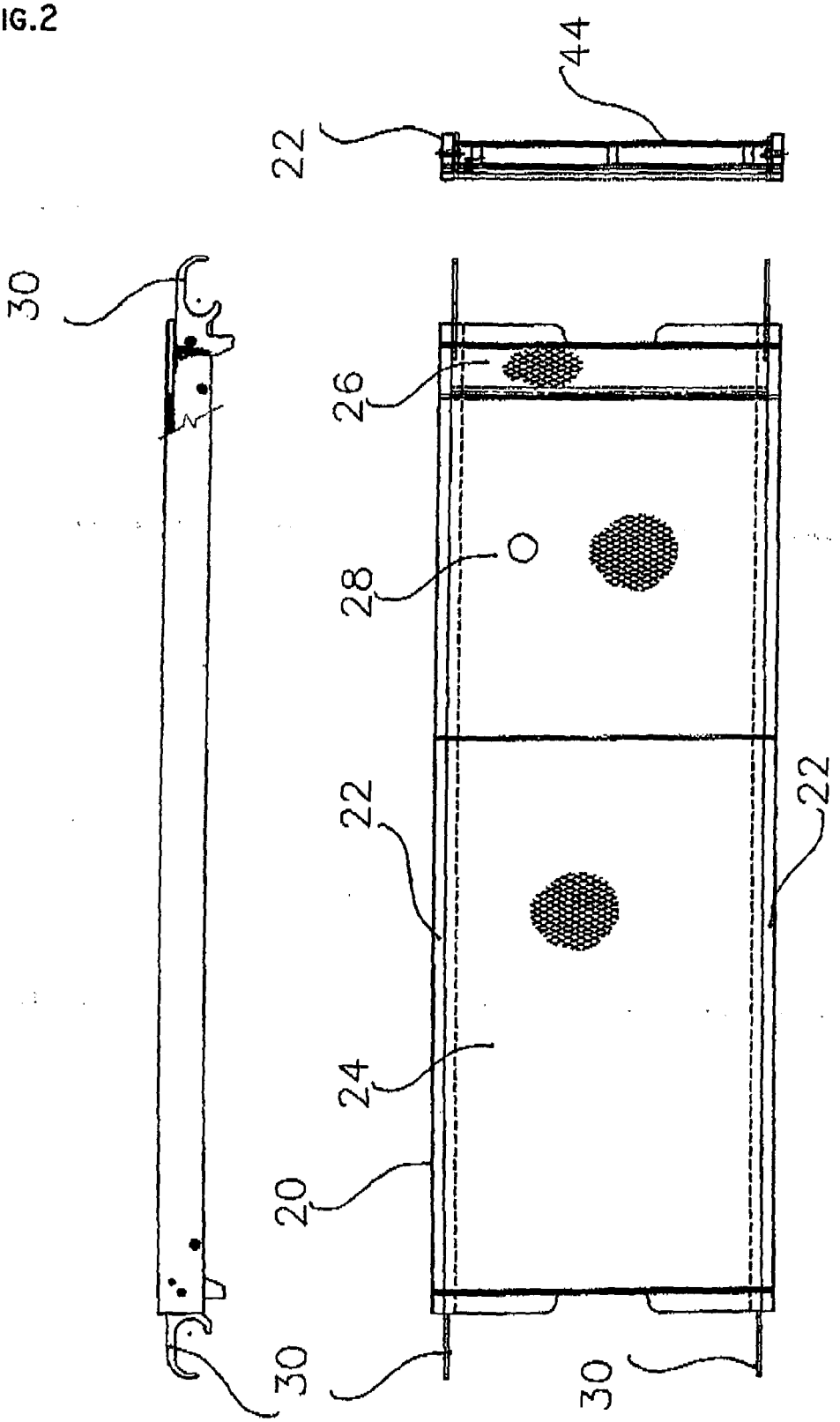


FIG.3

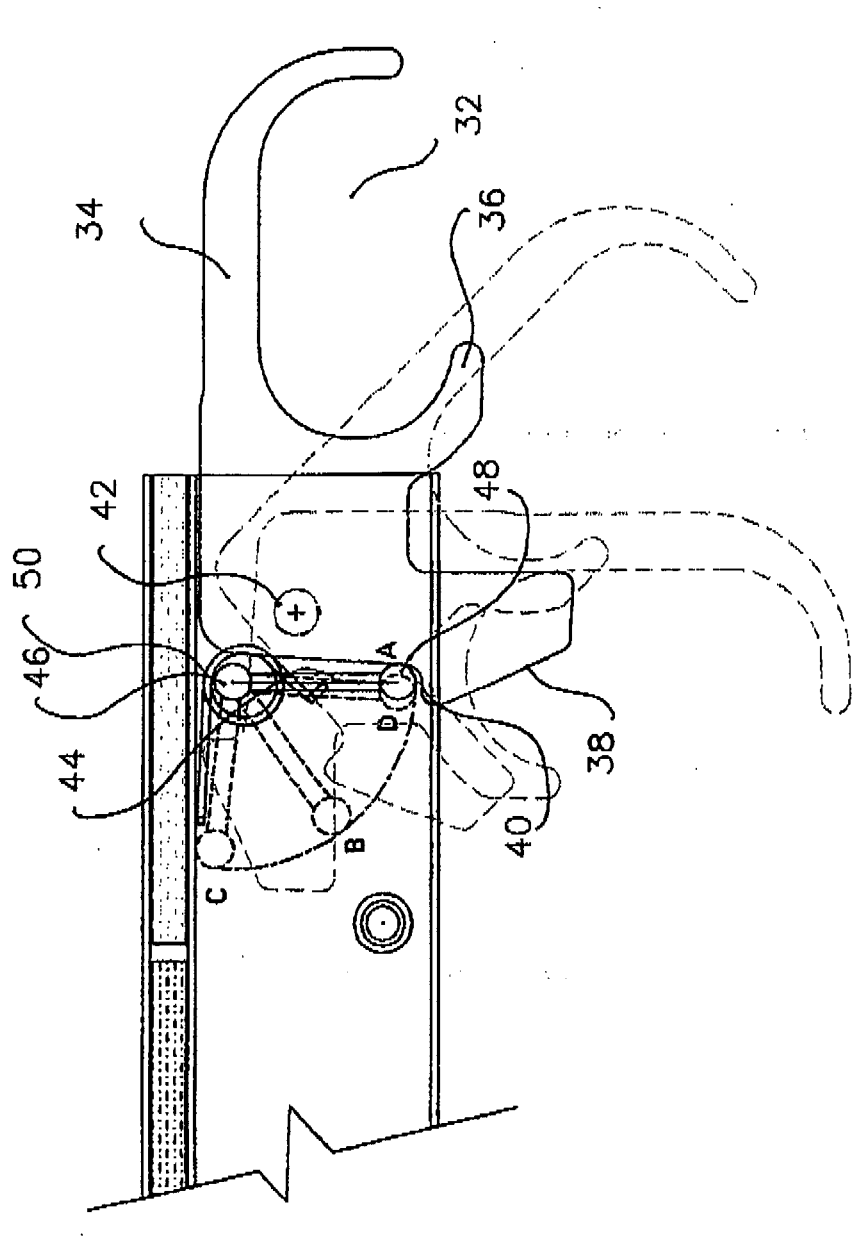
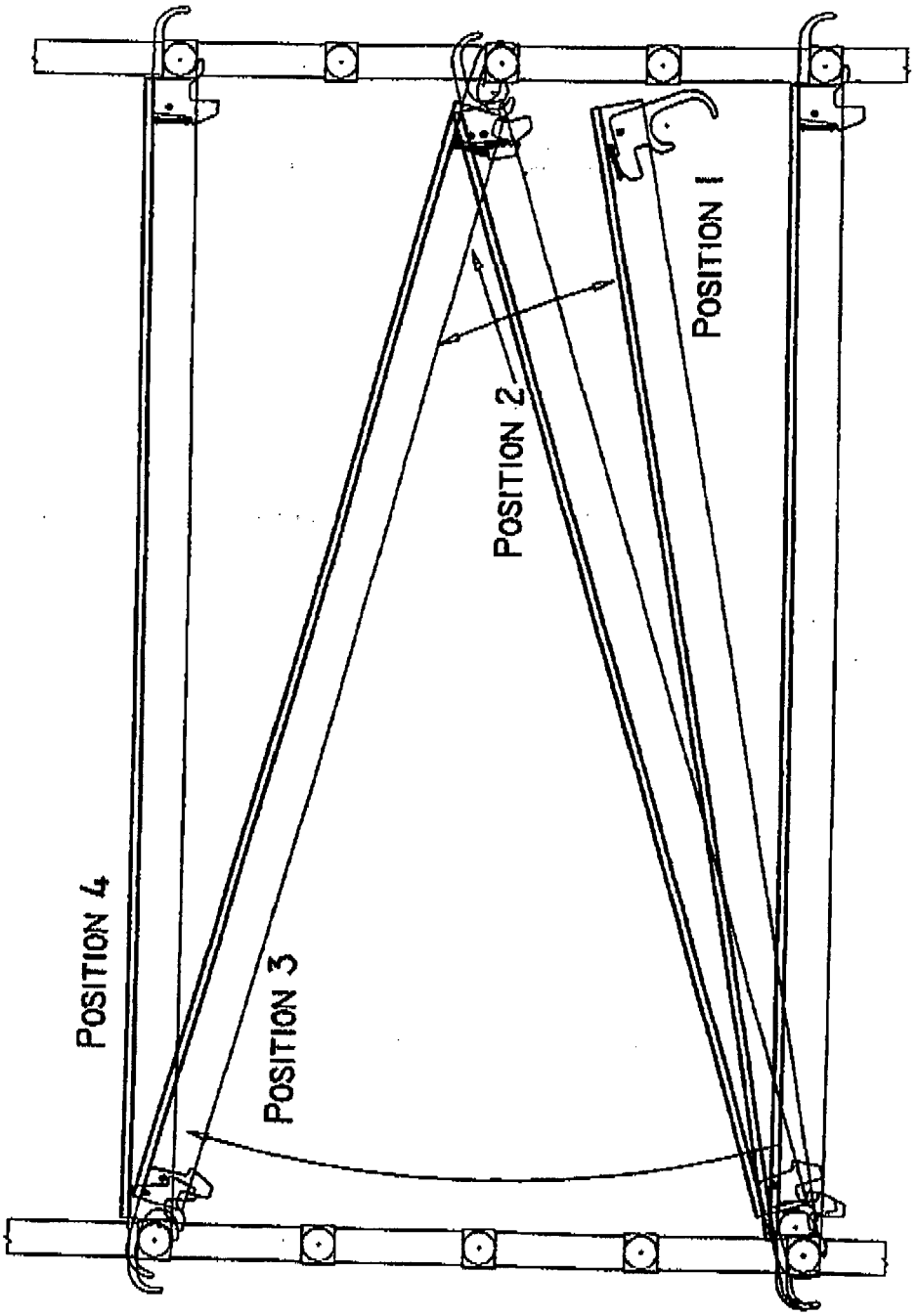


FIG.4



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 02 5243

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 2 859 745 A (COMABI [FR]) 18 March 2005 (2005-03-18) * figures 8-10 *	1,4	INV. E04G1/15 E04G1/20
X	FR 2 261 387 A1 (PETRALLI JEAN MARIE [FR]) 12 September 1975 (1975-09-12) * page 3, line 5 - line 16 * * figures 1-3,5 *	1-4,6-8	
X	FR 2 770 552 A1 (LACROIX DUARIB [FR]) 7 May 1999 (1999-05-07) * page 7, line 10 - line 17 * * figures *	1,2,4,5	
X	FR 2 701 981 A1 (COMABI [FR]) 2 September 1994 (1994-09-02) * figures 1-4 *	1,2,4-8	
A	FR 2 231 235 A (ENTREPOSE [FR]) 20 December 1974 (1974-12-20) * figures *	1	TECHNICAL FIELDS SEARCHED (IPC)
P,X	GB 2 425 563 A (OWENS ANDREW C [GB]) 1 November 2006 (2006-11-01) * the whole document *	1-8	E04G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	23 March 2007	Andlauer, Dominique

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 06 02 5243

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.

23-03-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2859745 A	18-03-2005	NONE	
FR 2261387 A1	12-09-1975	NONE	
FR 2770552 A1	07-05-1999	NONE	
FR 2701981 A1	02-09-1994	AT 137293 T	15-05-1996
		DE 69400159 D1	30-05-1996
		DE 69400159 T2	02-10-1996
		EP 0612899 A1	31-08-1994
FR 2231235 A	20-12-1974	NONE	
GB 2425563 A	01-11-2006	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82