

Commonwealth of Australia
The Patents Act 1952
DECLARATION IN SUPPORT

no. 17276/88

In support of the (Convention) Application/made by: Alain DUEZ

for a patent for an invention entitled: METHOD AND DEVICE FOR TRANSPORTING AND DISTRIBUTING MATERIALS AND/OR EQUIPMENT AT THE PERIPHERY OF A BUILDING

I (We) Alain DUEZ, "La Treille", Salignac, F-04290 Volonne, France of and care of the applicant company do solemnly and sincerely declare as follows:

- a) I am (~~We are~~) the applicant(s) for the patent
- or
- b) I am (~~We are~~) authorised by the applicant(s) for the patent to make this declaration on its behalf.

Delete the following if not a Convention Application.

The basic application(s) as defined by section 141 (142) of the Act was (were) made

on 12th May 1987 in France

on _____ in _____

on _____ in _____

by Alain DUEZ

The basic application(s) referred to in this paragraph is (are) the first application(s) made in a Convention country in respect of the invention the subject of the application.

a) I am (~~We are~~) the actual inventor(s) of the invention.

or
b)

is (are) the actual inventor(s) of the invention and the facts upon which

is (are) entitled to make the application are as follows:

1 014100 231189

Declared at Volonne, France this 26th day of October 19 89

Signed [Signature] Status _____

Declarant's Name Alain DUEZ

(12) PATENT ABRIDGMENT (11) Document No. AU-B-17276/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 618001

(54) Title
METHOD AND DEVICE FOR TRANSPORTING AND DISTRIBUTING MATERIALS AND/OR EQUIPMENT AT THE PERIPHERY OF A BUILDING

International Patent Classification(s)

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(51)⁵ **E04G 021/14**

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87 06757 12.05.87 FR FRANCE

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(56) Prior Art Documents
DE 3505174
FR 771182
FR 760884

(57) Claim

1. A device for transporting and distributing materials and/or equipment around the periphery of a building using a bearing structure similar to a scaffolding or a working or movement platform provided with a parapet, characterized in that it comprises a truck, said device comprising:

at least a first sliding or rolling member in engagement with at least one rigid longitudinal member of the framework of the parapet, this connection allowing at least the resultant forces equivalent to the horizontal component of the force diagram of the device to be transmitted to the parapet, and,

at least a second sliding or rolling member resting on at least one rigid longitudinal member of the framework of the parapet or on a rigid longitudinal member of the bearing reinforcement of said platform, or on the floor of said platform, this second sliding or rolling member (5b) allowing the transmission, to the parapet or to the bearing reinforcement of said platform, of the resultant forces equivalent to the vertical component of the force diagram

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of the device; the double connection between the truck and the bearing structure providing for the guiding and stability of the truck during these movements and at rest.



DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITE DE COOPERATION EN MATIÈRE DE BREVETS (PCT)

<p>(51) Classification internationale des brevets⁴ : E04G 1/26</p>	<p>AI</p>	<p>(11) Numéro de publication internationale: WO 88/ 08909 (43) Date de publication internationale: 17 novembre 1988 (17.11.88)</p>
<p>(21) Numéro de la demande internationale: PCT/FR88/00230 (22) Date de dépôt international: 11 mai 1988 (11.05.88) (31) Numéro de la demande prioritaire: 87/06757 (32) Date de priorité: 12 mai 1987 (12.05.87) (33) Pays de priorité: FR (71)(72) Déposant et inventeur: DUEZ, Alain [FR/FR]; "La Treille", Salignac, F-04290 Volonne (FR). (74) Mandataire: MAREK, Pierre; 28 et 32, rue de la Loge, F-13002 Marseille (FR). (81) Etats désignés: AT (brevet européen), AU, BE (brevet européen), CH (brevet européen), DE (brevet européen), DK, FI, FR (brevet européen), GB (brevet européen), IT (brevet européen), JP, LU (brevet européen), NL (brevet européen), NO,</p>		<p style="font-size: 2em; text-align: center;">618001</p> <p>Publiée <i>Avec rapport de recherche internationale.</i></p> <p style="text-align: center;">A. O. J. P. 27 JAN 1989</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>AUSTRALIAN - 6 DEC 1988 PATENT OFFICE</p> </div>

(54) Title: METHOD AND DEVICE FOR TRANSPORTING AND DISTRIBUTING MATERIALS AND/OR EQUIPMENT AT THE PERIPHERY OF A BUILDING

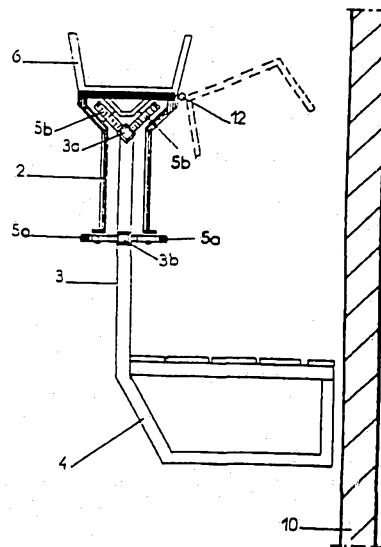
(54) Titre: PROCÉDE ET DISPOSITIF DE TRANSPORT ET DE DISTRIBUTION DE MATERIAUX ET/OU DE MATERIEL EN PÉRIPHÉRIE D'UN BATIMENT

(57) Abstract

Device for transporting and distributing materials and/or equipment at the periphery of a building by using a carrier structure similar to a scaffolding or to a working or circulation walk way (4) fitted with a parapet (3), characterized in that it comprises a carriage (1) having at least one sliding or rolling member (5a) connecting the carriage to at least one longitudinal solid element (3a, 3b) of the parapet (3), said connection transmitting to the parapet at least the resulting efforts equivalent to the horizontal component of the force diagram of a device.

(57) Abrégé

Dispositif de transport et de distribution de matériaux et/ou de matériel en périphérie d'un bâtiment utilisant une structure porteuse assimilable à un échafaudage ou à une passerelle de travail ou de circulation (4) équipée d'un garde-corps (3), caractérisé en ce qu'il comprend un chariot (1) comportant au moins une pièce (5a) de glissement ou de roulement le reliant à au moins un élément longitudinal solide (3a, 3b) de la structure du garde-corps (3), cette liaison permettant de transmettre audit garde-corps au moins les efforts résultants équivalents à la composante horizontale du diagramme des forces du dispositif.



METHOD AND DEVICE FOR TRANSPORTING AND DISTRIBUTING
MATERIALS AND/OR EQUIPMENT AROUND THE PERIPHERY OF A
BUILDING

5 The present invention relates to a method and a device for
transporting and distributing materials and/or equipment around the periphery
of a building.

 The invention ^{may} ~~can~~ be used in the technical field of building
construction or renovation works or civil engineering works.
10 It ^{has particular but not exclusive application} ~~also relates~~ to a device supplementing equipment which is widely
used by builders, i.e. the various types of scaffolding and platforms used for
external building works.

 The distribution of various equipment and/or materials around the
periphery of a building so that external works can be carried out takes place
15 from the ground using either cranes or mobile elevating machines, or even
manually on the working platform or the flooring of the scaffolding.

 Cranes provide access to all points of the building exterior, but the
costs of using them to carry out external works is very high. In addition, the
crane driver's lack of visibility of the external walls opposite the crane is a
20 serious source of danger. As a result of these drawbacks, cranes are hardly
ever used to carry out external works.

 Mobile elevating machines have a limited working height and allow a
satisfactory distribution of equipment and materials only if these machines can
circulate around the entire periphery of the buildings, which is seldom the case
25 in practice.

 Finally, manual movement on working platforms is difficult and costly.
The fatigue caused by such work can be reduced by trucks moving on the floor
of the platform since this rolling equipment is inexpensive and easy to move.
This method is not or is little used, however, since the space which the trucks
30 occupy impedes movement on the platforms and work itself. The centre of



gravity of the loads also has to be low if these trucks are to be stable. Loads must therefore be low and wider than they are high.

Finally, the document FR-A-760 884 discloses a sliding hook attached to the hand rail of the parapet of a scaffolding on which a variety of articles such as buckets, troughs, etc., which are not in use, can be hooked so as to free the floor of the scaffolding from bulky articles.

If the operator can use this sliding hook to move loads only over a short distance bounded by two successive parapet uprights which the hook cannot pass, this hook is not designed to be moved so as to form a means for transporting materials and/or equipment around the periphery of a building. In addition to the fact that this hook can slide only over a short distance bounded by two successive parapet uprights, as mentioned above, the hook can pivot about the hand rail, while the bucket suspended from it can swing in all directions. It can be seen, therefore, that a system of this type does not make it possible to transmit at least the resultant forces equivalent to the horizontal component of the force diagram of the device to the parapet and cannot guide and stabilize the device.

According to the present invention there is provided a device for transporting and distributing materials and/or equipment around the periphery of a building using a bearing structure similar to a scaffolding or a working or movement platform provided with a parapet, characterized in that it comprises a truck, said device comprising:

at least a first sliding or rolling member in engagement with at least one rigid longitudinal member of the framework of the parapet, this connection allowing at least the resultant forces equivalent to the horizontal component of the force diagram of the device to be transmitted to the parapet, and,

at least a second sliding or rolling member resting on at least one rigid longitudinal member of the framework of the parapet or on a rigid longitudinal member of the



bearing reinforcement of said platform, or on the floor of said platform, this second sliding or rolling member (5b) allowing the transmission, to the parapet or to the bearing reinforcement of said platform, of the resultant forces equivalent to the vertical component of the force diagram of the device; the double connection between the truck and the bearing structure providing for the guiding and stability of the truck during these movements and at rest.

According to the present invention there is further provided a method for transporting and distributing equipment and/or materials around the periphery of a building, characterized in that at least one truck is attached to at least one longitudinal member of a parapet of a scaffolding or platform installed in front of the outside of the building so as to guide and ensure the stability of the truck, whose displacement takes place via wheels disposed to bear on a running track formed by one of the rigid longitudinal members of the bearing structure formed by the platform and its parapet.

In order that the invention may be more fully understood, embodiments of the invention will be described by way of example only with reference to the accompanying drawings in which:

Fig. 1 is a cross-section through a truck running on the bearing framework of a platform, externally thereto, while being guided and stabilized chiefly by the parapet of this platform.

Fig. 2 is a cross-section through a further embodiment of the device of the invention whose truck runs on the floor of the platform, while being guided and stabilized chiefly by the parapet of the latter; the load being transported is a spraying apparatus.

Fig. 3 is a cross-section through a third embodiment of the device of the invention whose truck runs on the upper rail of the parapet, while being guided and stabilized chiefly by the lower rail of the parapet.

Fig. 4 is an elevation showing the platform equipped with an embodiment of a device of the invention, supported by a self-raising scaffolding, which device is provided with a winch whose cable is provided with an automatic load gripper device.



According to the method and device of an embodiment of the invention, at least one truck is attached to the parapet of the platform by creating a rigid and sliding or rolling connection therebetween. The truck is therefore always held and guided, during its movements, by the parapet. The connection is provided by at least one sliding or rolling member rigid with the truck and in engagement with at least one longitudinal member of the parapet, preferably the uppermost longitudinal member of the parapet. In addition, the truck-parapet connection makes it possible to transmit at least the horizontal forces in the force diagram of the device to the parapet.

In an embodiment, the chassis of the truck sits astride the parapet and the framework is provided with at least one wheel transmitting the weight of the truck and its load to at least one longitudinal member of the parapet framework.

In a further embodiment, the weight of the truck and its load are transmitted to the framework of the floor of the platform or scaffolding, via the rolling or sliding of the lower portion of the truck on this floor. In this case, the body of the truck may be outside or inside the parapet or straddling the latter.

The device of the embodiment provides the truck with all or part of the stability needed for the free positioning of the load which it is transporting. The use of the truck guided by the parapet therefore enables, without additional cost, the transportation of loads above or externally to the parapet without impeding movement and work on the floor. The guiding provided also means that the loads can be readily manually moved simply by pushing. It can also be seen that the truck movements may be readily motor driven.

The installation of the device on self-raising scaffolding creates a distribution system which, as a result of the coordinated movements of the truck and the platform, covers the whole of the exterior of the building. The movements of the self-raising scaffolding may also be motor driven.



Depending on the type of transport to be carried out, the truck can be provided with a container having a shape appropriate to the loads which it is to transport, which container can be provided with a tip unloading device or the like whose movements or operation may be motor driven.

The mobile truck is provided with a lifting apparatus, for instance a cable winch, in order to lift loads from the ground and bring them to the truck; this operation may be motor driven.

If the device described above is supplemented by a lifting apparatus, if each device is motor driven and if all the movements are automated in a coordinated way, a overall automatic supply apparatus is obtained making it possible, on the one hand, to pick up loads from any point on the ground around the periphery of the building so that they can be raised and put down at any point on the exterior of the building.

The truck may be fitted with at least one device adapted to carry out works on the external walls of buildings or in the vicinity of these walls in the case of buildings being constructed or renovated. The automatic movement and guiding of the truck may be used to provide a supplement indispensable to the full automation of some machines, for instance machines adapted to carry out: paint or plaster spraying, surfacing, the laying of plates, etc.



This method is chiefly remarkable in that at least one truck 1 is attached to the parapet 3 of the working or movement platform 4, by creating a solid and rolling or sliding connection therebetween.

Fig. 1 shows a first embodiment of the device of the invention which comprises, in this case, a truck 1 whose lower portion is provided with one or several wheels 5b bearing on a longitudinal running and guide track 4a rigid with the reinforcing members 4b of the platform 4 formed by brackets secured to the exterior of the building, the running track 4a being disposed on the outside of these members below the parapet 3 of the platform.

In its upper portion, the truck 1 has a slide 5a clamping the upper rail 3a of the parapet and mounted so that it can slide along the latter.

At the top, the truck 1 bears a container 6 formed in this case by a simple bucket.

The wheel 5b, or one of the wheels 5b when the truck is provided with a plurality of wheels, is coupled to a motor 13 so that it can be driven in rotation and so that the movements of the truck along the parapet can be motor driven.

In this embodiment, the vertical forces of the truck and its load are transmitted via the wheel(s) 5b to the members 4a, 4b of the reinforcement of the platform 4, the longitudinal profiled members forming the outer surface of the platform having a shape appropriate to the introduction and movement of the wheels 5b.

In the embodiment shown in Fig. 2, the base of the truck 1 is fitted with one or several wheels 5b bearing on the floor 4c of the platform 4 which may comprise a running and guide track 4d disposed in the vicinity of and along the parapet 3.

In the embodiment shown, the truck 1 also comprises in its upper portion a slide 5a mounted so as to slide on the upper rail 3a of the parapet.

In this embodiment, the truck 1 supports an apparatus 11 allowing a product to be sprayed onto the exterior 10 of the building; the truck may



however be provided with one or several devices or machines allowing different, completely or partly automated, works to be carried out on the external walls of buildings.

In the embodiment shown in Fig. 3, the truck 1 comprises a U-shaped
5 framework or chassis 2 which is disposed astride the upper rail 3a of the parapet 3 of the platform 4 installed in front of the exterior 10 of the building.

In its upper portion, the chassis 2 is provided with several pairs of wheels or rollers 5b which are inclined at 45° so that they are tangential to the tube of square cross-section which, in this embodiment, forms the upper rail 3a
10 of the parapet 3. In this way the wheels 5b transmit the weight of the truck 1 and its load to the parapet as well as part of the horizontal forces needed for stability. In its lower portion, the framework of the truck is provided with a slide formed by wheels or rollers 5a having a vertical axis which run on the
15 opposite vertical surfaces of the tube of square cross-section forming the lower rail 3b of the parapet so as to transmit the remaining part of the horizontal forces of the device thereto.

In this embodiment, the truck 1 has a container 6 provided with a known tipping device 12 so that the load transported by this container can be easily dumped.

20 In the embodiment shown in Fig. 4, the platform 4 is formed by the platform of a self-raising scaffolding 7 suspended or supported by a lifting device 7b on the uprights 7a erected and held in the lower portion of the building 10.

The truck 1 is of the type shown in Fig. 3 and straddles the parapet.
25 It is provided with a motor driven winch 8 whose cable 8a is provided at its end with an automatic load gripper device 9, which loads take the form of plates 14 in the embodiment shown.

It can be seen that the mobility of the truck 1 makes it possible to take the loads from a storage location organized and distributed around the
30 periphery of the building and to deposit them at any point on the platform extending round the building.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A device for transporting and distributing materials and/or equipment around the periphery of a building using a bearing structure similar to a scaffolding or a working or movement platform provided with a parapet, characterized in that it comprises a truck, said device comprising:

at least a first sliding or rolling member in engagement with at least one rigid longitudinal member of the framework of the parapet, this connection allowing at least the resultant forces equivalent to the horizontal component of the force diagram of the device to be transmitted to the parapet, and,

at least a second sliding or rolling member resting on at least one rigid longitudinal member of the framework of the parapet or on a rigid longitudinal member of the bearing reinforcement of said platform, or on the floor of said platform, this second sliding or rolling member (5b) allowing the transmission, to the parapet or to the bearing reinforcement of said platform, of the resultant forces equivalent to the vertical component of the force diagram of the device; the double connection between the truck and the bearing structure providing for the guiding and stability of the truck during these movements and at rest.

2. A device as claimed in claim 1, characterized in that the movements of the truck are motor driven.

3. A device as claimed in either one of claims 1 or 2, characterized in that the bearing structure similar to a scaffolding or platform is of the self-raising type and its vertical movements can be motor driven.

4. A device according to any one of the preceding claims, characterized in that the truck is provided with a known tipper device allowing the load being transported to be deposited or dumped, said tipper device is able to be motor driven.

5. A device according to any one of the preceding claims, characterized in that the truck is provided with a known lifting device, for instance in the form of a winch, allowing loads to be transported between the ground and the



truck, said lifting device can be motor driven and is preferably provided with a gripping device for gripping the loads on the ground and in which the gripping device can be motor driven and/or automated.

6. A device as claimed in claim 5, characterized in that the motor driven operation of the gripping device, the lifting device, the truck and the tipper device are controlled in a coordinated way to form an automatic supply device.

7. A device according to any one of the preceding claims, characterized in that the truck supports at least one apparatus allowing work to be carried out on the exterior of the building in a completely or partly automated manner.

8. A method for transporting and distributing equipment and/or materials around the periphery of a building, characterized in that at least one truck is attached to at least one longitudinal member of a parapet of a scaffolding or platform installed in front of the outside of the building so as to guide and ensure the stability of the truck, whose displacement takes place via wheels disposed to bear on a running track formed by one of the rigid longitudinal members of the bearing structure formed by the platform and its parapet.

9. A device for transporting and distributing materials and/or equipment around the periphery of a building substantially as hereinbefore described and illustrated with reference to the accompanying drawings.

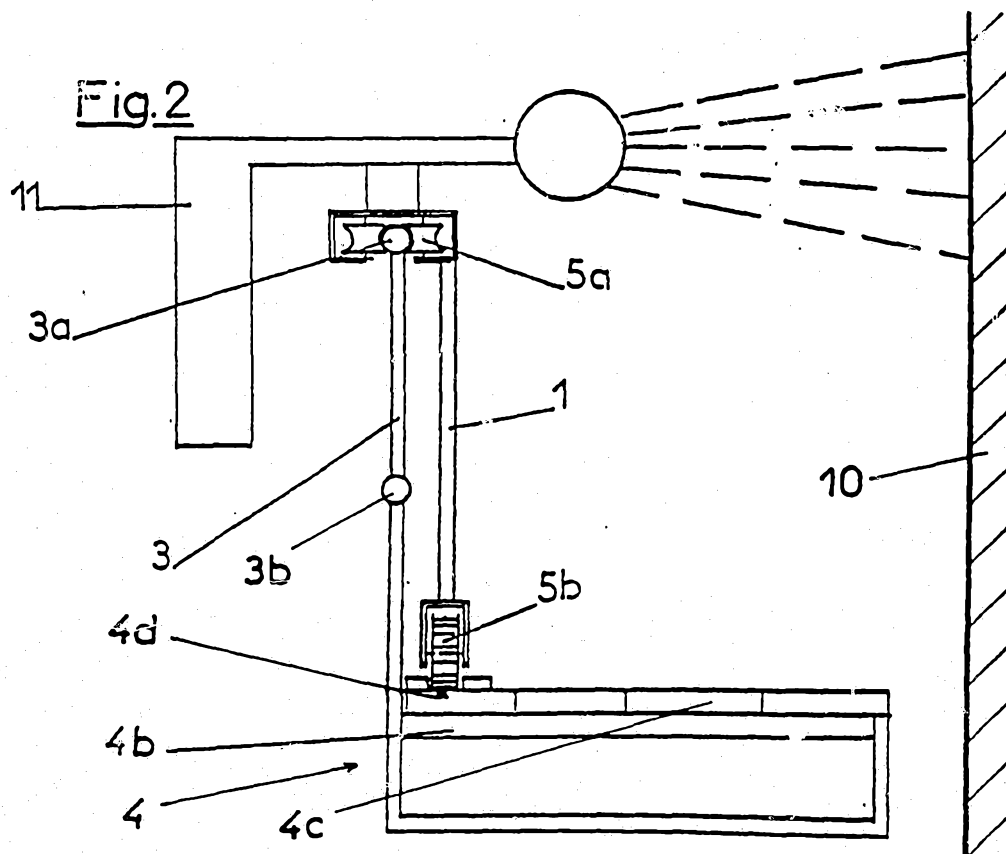
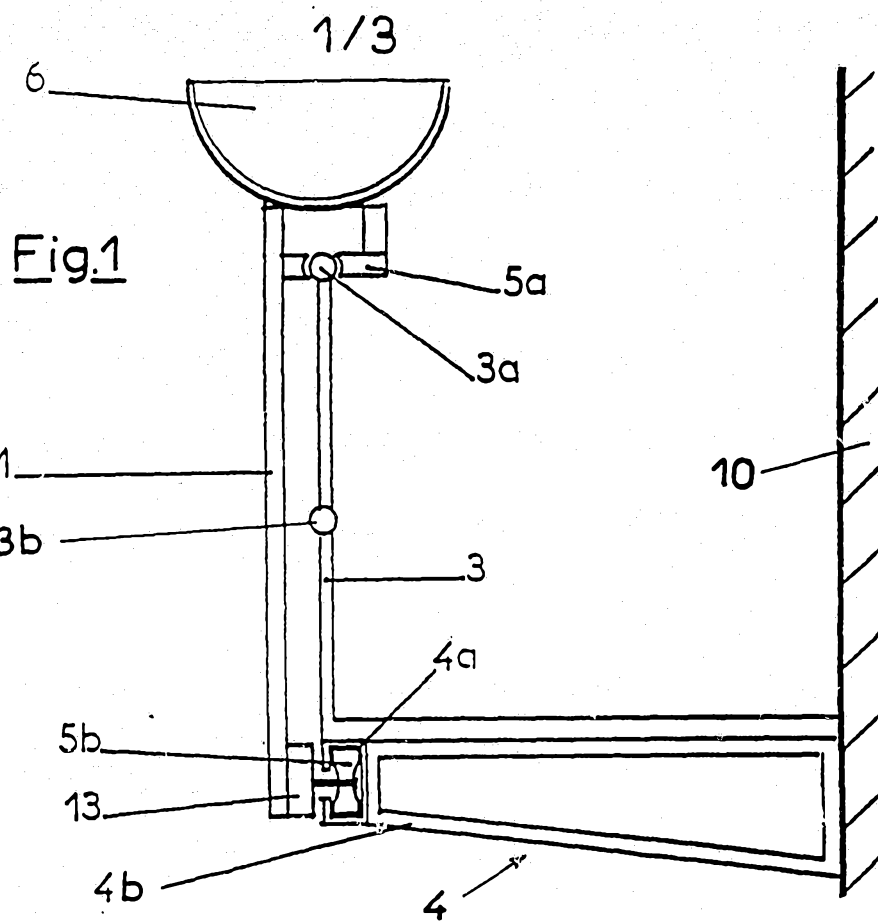
10. A method for transporting and distributing materials and/or equipment around the periphery of a building substantially as hereinbefore described and illustrated with reference to the accompanying drawings.

DATED THIS 7TH DAY OF JANUARY, 1991.

ALAIN DUEZ
By Its Patent Attorneys

GRIFFITH HACK & CO.
Fellows Institute of Patent
Attorneys Australia





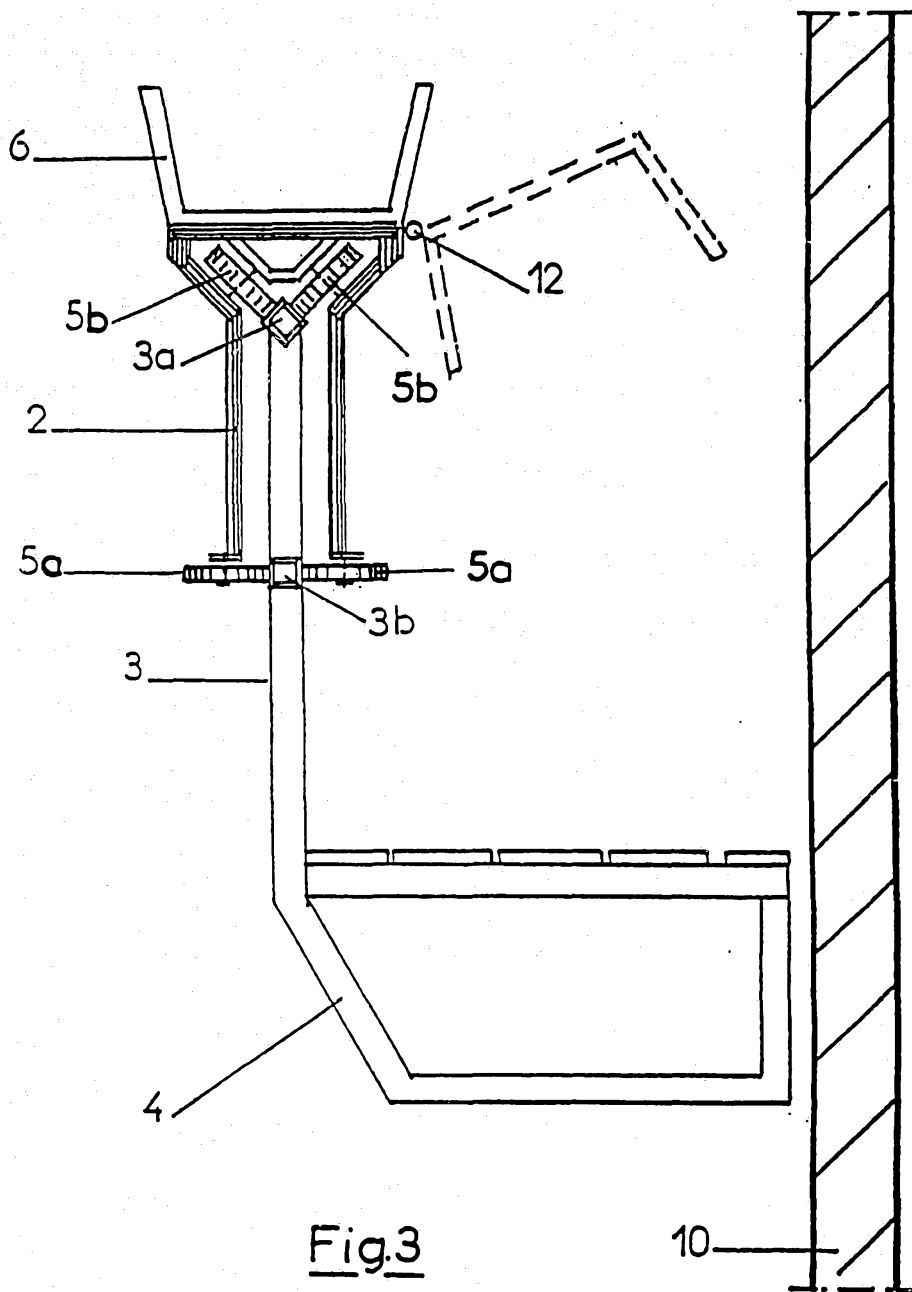
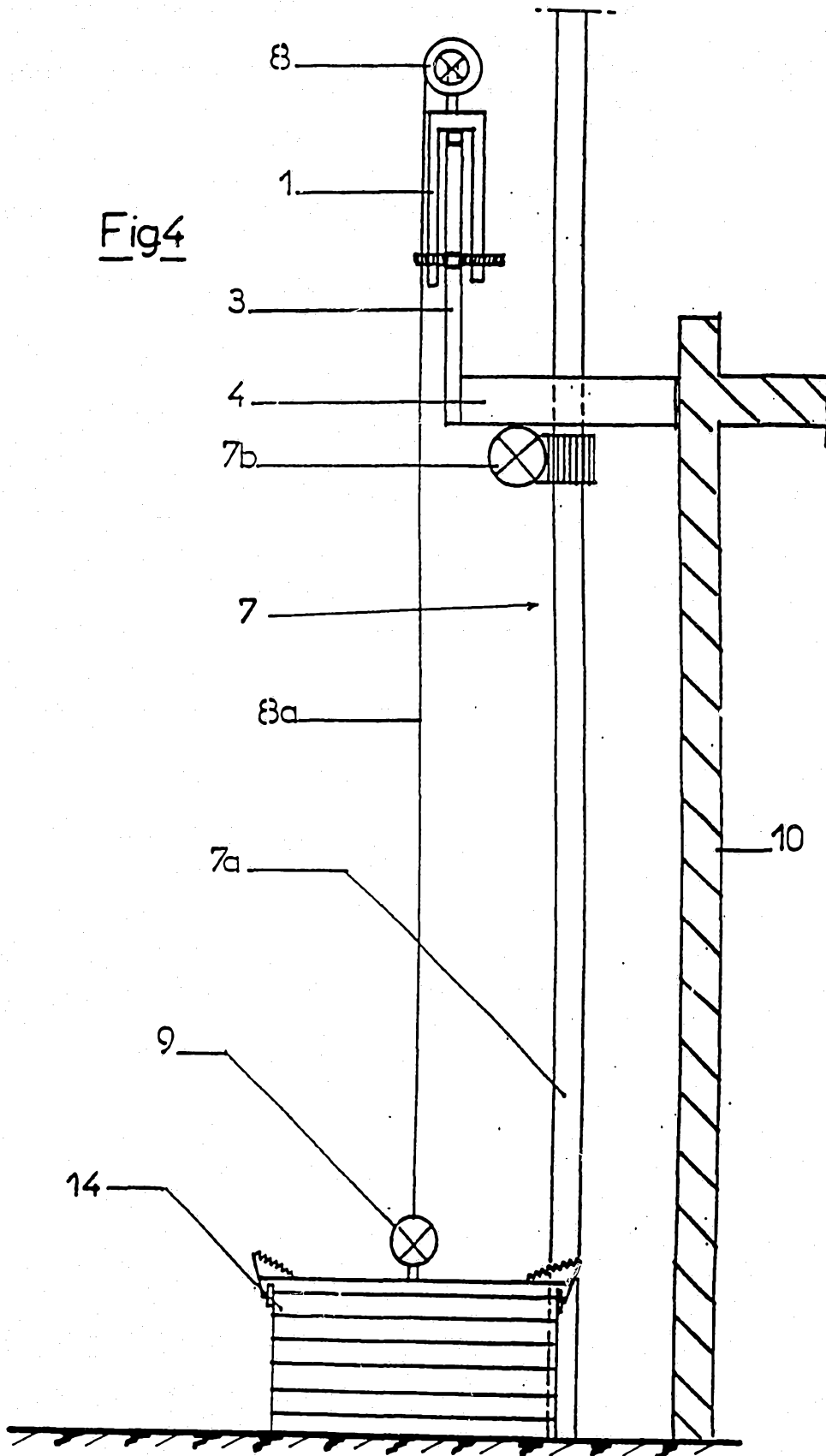


Fig.3

3/3

Fig4



INTERNATIONAL SEARCH REPORT

PCT/FR88/00230

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int.Cl ⁴ : E 04 G 1/26		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl ⁴	E 04 G	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	DE, A, 3505174 (BAUMANN) 21 August 1986 --	
A	FR, A, 771182 (LACOUR) 02 October 1934 --	
A	FR, A, 760884 (GARDE) 05 March 1934 -----	
<p>⁹ Special categories of cited documents: ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
08 July 1988 (08.07.88)	21 July 1988 (21.07.88)	
International Searching Authority	Signature of Authorized Officer	
European Patent Office		

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.

FR 8800230
SA 22386

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 12/07/88
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

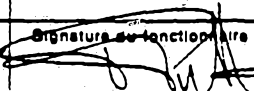
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A- 3505174	21-08-86	Aucun	
FR-A- 771182		Aucun	
FR-A- 760884		Aucun	

EPO FORM 10079

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

RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale N° PCT/FR 88/00230

I. CLASSEMENT DE L'INVENTION (si plusieurs symboles de classification sont applicables, les indiquer tous) ⁷		
Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB		
CIB ⁴ : E 04 G 1/26		
II. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE		
Documentation minimale consultée ⁸		
Système de classification	Symboles de classification	
CIB ⁴	E 04 G	
Documentation consultée autre que la documentation minimale dans la mesure où de tels documents font partie des domaines sur lesquels la recherche a porté ⁹		
III. DOCUMENTS CONSIDÉRÉS COMME PERTINENTS ¹⁰		
Catégorie ⁶	Identification des documents cités, ¹¹ avec indication, si nécessaire, des passages pertinents ¹²	N° des revendications visées ¹³
A	DE, A, 3505174 (BAUMANN) 21 août 1986 --	
A	FR, A, 771182 (LACOUR) 2 octobre 1934 --	
A	FR, A, 760884 (GARDE) 5 mars 1934 -----	
<p>⁶ Catégories spéciales de documents cités: ¹¹</p> <ul style="list-style-type: none"> « A » document définissant l'état général de la technique, non considéré comme particulièrement pertinent « E » document antérieur, mais publié à la date de dépôt international ou après cette date « L » document pouvant jeter un doute sur une revendication de priorité ou cité pour déterminer la date de publication d'une autre citation ou pour une raison spéciale (telle qu'indiquée) « O » document se référant à une divulgation orale, à un usage, à une exposition ou tous autres moyens « P » document publié avant la date de dépôt international, mais postérieurement à la date de priorité revendiquée « T » document ultérieur publié postérieurement à la date de dépôt international ou à la date de priorité et n'appartenant pas à l'état de la technique pertinent, mais cité pour comprendre le principe ou la théorie constituant la base de l'invention « X » document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme nouvelle ou comme impliquant une activité inventive « Y » document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme impliquant une activité inventive lorsque le document est associé à un ou plusieurs autres documents de même nature, cette combinaison étant évidente pour une personne du métier. « & » document qui fait partie de la même famille de brevets 		
IV. CERTIFICATION		
Date à laquelle la recherche internationale a été effectivement achevée	Date d'expédition du présent rapport de recherche internationale	
8 juillet 1988	21 JUIL. 1988	
Administration chargée de la recherche internationale	Signature du fonctionnaire autorisé	
OFFICE EUROPEEN DES BREVETS	 P. G. VAN DER PUTTEN	

ANNEXE AU RAPPORT DE RECHERCHE INTERNATIONALE
RELATIF A LA DEMANDE INTERNATIONALE NO.

FR 8800230
SA 22386

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche international visé ci-dessus.
Lesdits membres sont contenus au fichier informatique de l'Office européen des brevets à la date du 12/07/88
Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets.

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
DE-A- 3505174	21-08-86	Aucun	
FR-A- 771182		Aucun	
FR-A- 760884		Aucun	

ETD FORM 10M72

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82