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(71) Applicant: **NEWELL, Gregory** [PT/PT]; Rua Dr. Antonio Dias Pinheiro No 100, Apartment 'G', 2750-294 Cascais (PT).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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- Published:**
- with international search report (Art. 21(3))
  - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
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- (88) Date of publication of the international search report:  
22 November 2018 (22.11.2018)

(54) Title: HITCHING CART MOVER

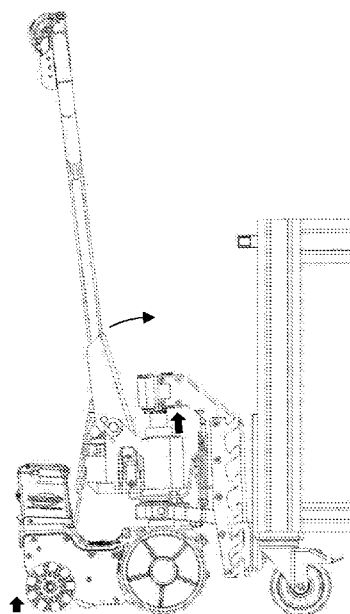


Figure 54

(57) Abstract: The present application relates to cart moving device where a hitching assembly is attached to a jacking assembly, as from a conventional manual pallet jack. The geometry of the linkages creates both a lifting and rotating motion that allows the device-side hitch to simply engage with the cart-side hitch, securely lock to it, then rotate the device so that the rear maneuvering wheels are lifted up and out of contact with the ground. The device is suited to cart moving applications where a compact, low-cost and securely hitching device is desired.



INTERNATIONAL SEARCH REPORT

International application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
INV. B62B5/00 B62B3/06  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
B62B B60D B66F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                      | Relevant to claim No. |
|-----------|---|-----------------------|
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| Y         | GB 2 399 563 A (FAGE MICHAEL DONNELLY [GB])<br>22 September 2004 (2004-09-22)<br>page 1 - page 3; figures 1,2<br>-----  | 1-5                   |
| Y         | US 7 500 448 B1 (MELHORN J MICHAEL [US])<br>10 March 2009 (2009-03-10)<br>column 3 - column 4; figures 1,2,8<br>-----   | 1-5                   |
|           | -/--  |                       |

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

|   |   |
|---|---|
| <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent 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 when the document is taken alone</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>"&amp;" document member of the same patent family</p> |
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| Date of the actual completion of the international search<br><br>13 July 2018 | Date of mailing of the international search report<br><br>12/10/2018 |
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| Name and mailing address of the ISA/<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Authorized officer<br><br>Lindner, Volker |
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## INTERNATIONAL SEARCH REPORT

International application No  
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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
|--|--|-----------------------|
| Category*  | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
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| Y  | FR 1 550 367 A (M. LUCIEN CHARLES JOANNET)<br>20 December 1968 (1968-12-20)<br>page 1 - page 2; figures<br>-----           | 1,2                   |
| A  | WO 2012/085640 A1 (ASSISTANCE TECH IND<br>[FR]; BEAUDOUIN LUC [FR])<br>28 June 2012 (2012-06-28)<br>figures 1,2,9<br>----- | 3-5                   |
| Y  | US 2005/116432 A1 (BORRMANN HANS-PETER<br>[DE]) 2 June 2005 (2005-06-02)<br>the whole document<br>-----                    | 1,2                   |
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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|---|
| International application No<br>PCT/IB2018/051858 |
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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date  |
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB2018/051858

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-5

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. claims: 1-5

a drive system wherein a driven wheel is mounted between the support wheels, or the support wheels themselves are driven by one or more motors, such as battery powered electric motor(s), in each case providing a motive force to the cart moving device and a vertically oriented pivot axis centered through the piston rod and about which the connected handle assembly and support wheel(s) of the device pivot, allowing turning of the cart moving device relative to the device-side hitch assembly and, when connected to a cart, also relative to that attached cart;

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## 2. claims: 6-14

a device-side hitch that can engage with a cart-side hitch to establish a secure connection between the two hitches, thereby securely connecting the cart moving device to the cart, a device-side hitch assembly that includes a first connection with a piston rod that is raised up to hitch and a second connection through supporting arm(s) pivotably mounted to a non-lifting member, such as the thrust plate that the lifting cylinder is mounted to, so that when the piston rod is raised the device-side hitch is rotated as it is raised, relative to the device.

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