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KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, 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.

(84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

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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[Continued on next page]

(54) **Title:** MECHANISM FOR CONVERTING A RECIPROCATING MOVEMENT INTO A ROTATIONAL MOVEMENT AND VICE VERSA, AND DEVICE COMPRISING SUCH A MECHANISM.

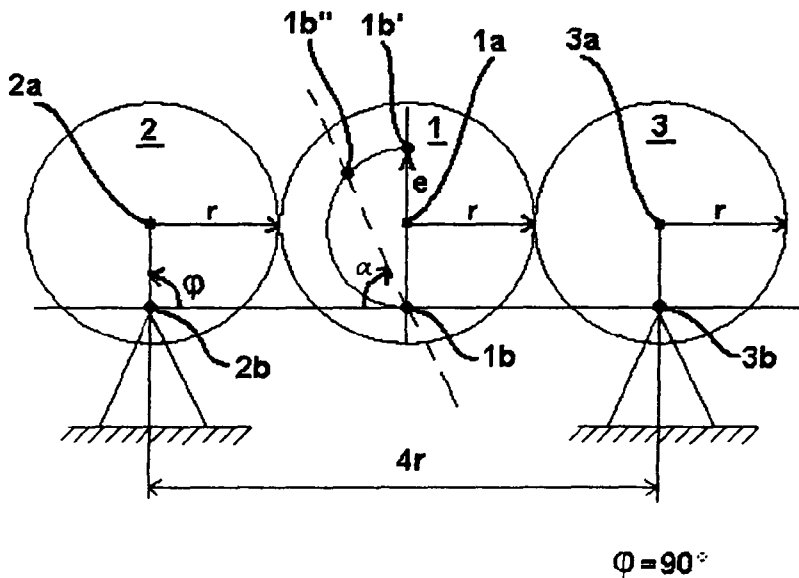


FIG.1C

(57) **Abstract:** Mechanism for converting a reciprocating movement into a rotational movement and vice versa, the mechanism comprising at least three wheels (1,2,3) working together, whereby the excentrical rotational axis (1b,1b',1b'') of the first wheel (1) reciprocates rectilinearly with respect to the excentrical rotational axis (2b,3b) of the second and third wheels (2,3), whereby the second and third wheels (2,3) are also positively coupled in their rotation via further means (1',2',3',14), and the at least one wheel (1,2,3), which is provided with means for rotatable connection with a rectilinear reciprocating member, is not provided with means for a rotatable connection at the axis through its centre (1a,2a,3a), or at least two wheels are coupled by means of magnetism, so that the wheels can not disengage from each other.

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1 December 2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2011/001126

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.:

1-13

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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2011/001126

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F16H21/36 F16H21/30
 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)
 F16H F01B F02B

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 practical, search terms used)
 EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | DE 32 32 974 A1 (MAYER MICHAEL) 15 March 1984 (1984-03-15) | 1,3-8 |
| A | page 13, line 31 - page 14, line 14 page 14, line 32 - page 15, line 19 page 25, line 28 - page 26, line 6 figures 1,3,4,5,7,12 | 2 |
| A | ----- DE 44 30 423 A1 (LOHMEYER HARTMUT [DE]) 2 March 1995 (1995-03-02) column 3, line 11 - line 41; claims 1,2; figures 1-4 | 1,2,7,8 |
| A | ----- FR 863 706 A (G. S. KAMMER) 8 April 1941 (1941-04-08) the whole document | 1,2 |
| | ----- | |

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "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)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "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
- "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
- "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.
- "&" document member of the same patent family

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| Date of the actual completion of the international search 10 August 2011 | Date of mailing of the international search report 11/10/2011 |
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| Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016 | Authorized officer Mende, Hasso |
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2011/001126

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| DE 3232974 | A1 | 15-03-1984 | NONE |
| DE 4430423 | A1 | 02-03-1995 | NONE |
| FR 863706 | A | 08-04-1941 | NONE |

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-13

Within non unity subject 1 two inventions had been claimed:
In particular claims 1 and 9 : Device for converting reciprocating movement into rotational movement with piston rod comprising open grooves;
Claim 2 : Coupling means for a mechanism for converting reciprocating movement into rotational movement.

1.1. claims: 1, 3-13

Device with connecting rod comprising open grooves

1.2. claims: 2, 3, 5-13

Coupling means ---

2. claim: 14

Method for balancing a mechanism for converting reciprocating movement into rotational movement ---