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(71) Applicant (for all designated States except US):
CEQUENT PERFORMANCE PRODUCTS, INC.
[US/US]; 47912 Halyard Drive, Suite 100, Plumouth, MI
48170 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ANDERSON, Eric**
[US/US]; 2200 Washington Avenue, Plover, WI 54467
(US). **OKERLUND, Kawa-she-quoen, Wm.** [US/US];
8805 Galloway Drive, Wittenberg, WI 54499 (US).

(74) Agent: **BENNI, Todd, A.**; McDonald Hopkins LLC, 600
Superior Avenue, East, Suite 2100, Cleveland, OH 44114
(US).

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(54) Title: WINCH ASSEMBLY

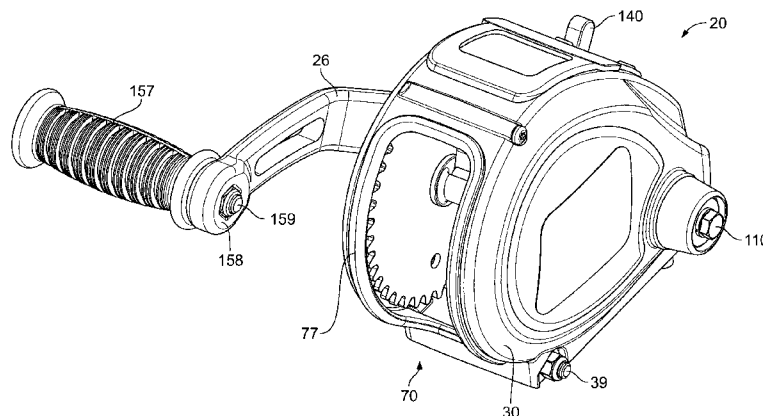


FIG. 1

(57) Abstract: A winch assembly is described and shown herein. The winch assembly may include a housing member, a winch drum rotatably and operatively coupled to the housing member and generally held within the housing member, and a drum hub attached with the winch drum. The winch assembly may further include a recess formed in the drum hub, and a cargo connection member positioned in the recess and operatively engaged with the drum hub, where during rotation of the drum hub in a first direction the cargo connection member generally concentrically wraps around the drum hub.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/62869

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B66D 1/02 (2012.01)

USPC - 254/266

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)

254/266

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 254/199, 213, 241, 264, 278, 279, 294, 323, 329, 342, 372, 373 (keyword limited; terms below)Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Thomson Innovation [USGrant, GB App, USApp, FR App, WO App, DE Util, EP Grant, DE Grant, EP App, DE App, JP Util, JP Grant, JP App, CN Util, CN App, KR Util, KR Grant, KR App]; Google Scholar; Gear, winch, drum, strap, rope, chain, hub, recess

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 5,346,153 A (Ebey) 13 September 1994 (13.09.1994) col 2, ln 59 to col 3, ln 14; fig 1	1-3, 11-12, 14 ----- 4-10, 13
Y	US 3,910,558 A (Brucker et al.) 07 October 1975 (07.10.1975) fig 1, 2, 4A, 4B	4-10
Y	US 1,453,559 A (Webb) 01 May 1923 (01.05.1923) fig 1	13
A	US 7,806,386 B2 (Yang et al.) 05 October 2010 (05.10.2010) entire document	1-14

☐ Further documents are listed in the continuation of Box C.

* 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 application or patent 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

Date of the actual completion of the international search

29 May 2012 (29.05.2012)

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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

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Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/62869

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 extra 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 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.:
1-14

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/US 11/62869

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-14; directed to a winch assembly comprising a cargo connection member.

Group II: Claims 15-22; directed to a winch assembly comprising a drive system.

Group III: Claims 23-29; directed to a winch assembly comprising an installation system.

The inventions listed as Groups I - III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is a cargo connection member, which is not present in Groups II or III. The special technical feature of Group II is a drive system, which is not present in Groups I or III. The special technical feature of Group III is an installation system, which is not present in Groups I or II.

The only element of commonality between groups I-III is that of winch assembly comprising a housing member, which is known in the prior art (ref. US 2010/0294479 A1 to Shee; Abstract--"A winch assembly (30) comprises a winch chamber (32) defined within a housing (31)"; Fig. 2).

The only element of commonality between groups I and II is that of a winch drum operatively coupled and positioned within the winch housing, which is known in the prior art (ref. US 2010/0294479 A1 to Shee; Abstract--"A winch assembly (30) comprises a winch chamber (32) defined within a housing (31)...A winch drum (34) which supports a spoolable medium (36), such as wireline, is rotatably mounted within the winch chamber (32)"; Fig. 2).

Accordingly, unity of invention is lacking under PCT Rule 13.1.