

(43) International Publication Date
14 April 2016 (14.04.2016)

(51) International Patent Classification:

F15B 13/01 (2006.01) F15B 15/18 (2006.01)
F15B 13/044 (2006.01)

(21) International Application Number:

PCT/US2015/054623

(22) International Filing Date:

8 October 2015 (08.10.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

14/511,463 10 October 2014 (10.10.2014) US

(71) Applicant: MEA INC. [US/US]; 2600 American Lane,
Elk Grove Village, Illinois 60007 (US).(72) Inventor: CHESTER, Mark V.; 910 Angle Tarn, West
Dundee, Illinois 60118 (US).(74) Agent: FALLON, Peter J.; c/o Locke Lord LLP, Three
World Financial Center, New York, New York 10281-
2101 (US).(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, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
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.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, 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))— as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: SELF-CONTAINED ENERGY EFFICIENT HYDRAULIC ACTUATOR SYSTEM

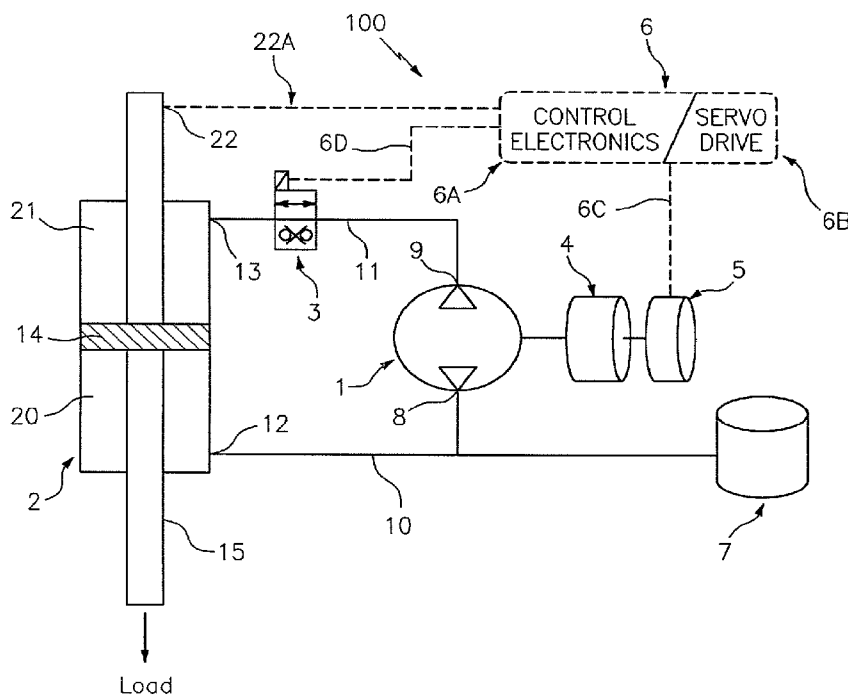


FIG. 1

(57) Abstract: The self-contained energy efficient hydraulic actuator system of the present invention includes a hydraulic cylinder, a servo motor that is configured to produce rated torque from zero RPM to maximum rated RPM with rotor speed/position feedback to a servo motor, a pump, and a solenoid valve that enables the hydraulic cylinder to maintain its position without the motor running. The system has the ability to hold a load in place without motor operation via the use of the solenoid valve, and therefore saves energy and extends the motor lifetime by minimizing the motor running time.

Published:

— *with international search report (Art. 21(3))*