

(51) International Patent Classification:
F41A 5/18 (2006.01)(21) International Application Number:
PCT/US2012/049054(22) International Filing Date:
31 July 2012 (31.07.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/526,580 23 August 2011 (23.08.2011) US
61/526,569 23 August 2011 (23.08.2011) US
13/562,077 30 July 2012 (30.07.2012) US
13/562,078 30 July 2012 (30.07.2012) US(71) Applicant (for all designated States except US): **GENERAL DYNAMICS ARAMENT AND TECHNICAL PRODUCTS, INC.** [US/US]; Four LakePoint Plaza, 2118 Water Ridge Parkway, Charlotte, NC 28217 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **STEIMKE, David** [US/US]; 120 Nottingham, La Burlington, VT 05408 (US). **ROSSIER, Glenn** [US/US]; 5220 Rt 7, Ferrisburg, VT 05456 (US).(74) Agent: **ANDERSON, Chad, C.**; Ingrassia Fisher & Lorenz, P.C., 7010 E. Cochise Road, Scottsdale, AZ 85253 (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, IS, JP, KE, KG, KM, KN, KP, 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, QA, RO, RS, RU, RW, 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, 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, ML, MR, NE, SN, TD, TG).

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))

(88) Date of publication of the international search report:

13 June 2013

(54) Title: WEAPON SYSTEM WITH SHORT RECOIL IMPULSE AVERAGING OPERATING GROUP

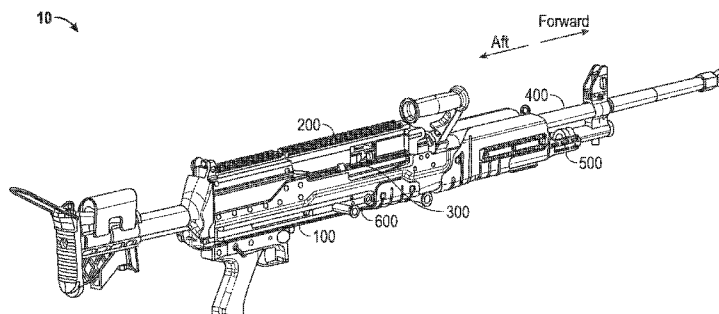


FIG. 1

(57) Abstract: A weapon system includes a receiver and an operating group with a barrel extension arranged to axially translate relative to the receiver. In the firing condition, the op-rod assembly and bolt assembly are driven by the drive spring such that the round is guided into the chamber and the op-rod assembly and bolt assembly are locked to the barrel extension and a forward momentum of the op-rod assembly is imparted to the operating group and the round is fired. A portion of an impulse stops the forward momentum of the operating group. In the recoil condition, the operating group is driven rearward by the remaining portion of the impulse, the gas accelerator imparts additional rearward momentum to the op-rod assembly and bolt assembly and stops rearward momentum of the barrel and barrel extension, and the op-rod assembly and the bolt assembly are stopped by the drive spring.