



US009410775B2

(12) **United States Patent**
Pedersen

(10) **Patent No.:** **US 9,410,775 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

- (54) **SELF CENTERING NOCK**
- (71) Applicant: **Out RAGE, LLC**, Cartersville, GA (US)
- (72) Inventor: **William E. Pedersen**, Duluth, MN (US)
- (73) Assignee: **Out RAGE, LLC**, Superior, WI (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

4,003,576 A	1/1977	Carella
4,305,588 A	12/1981	Dodge
4,340,930 A	7/1982	Carissimi
4,547,837 A	10/1985	Bennett
4,645,211 A	2/1987	Beiter
D301,272 S	5/1989	Barrow et al.
4,856,792 A	8/1989	Hardison
4,900,037 A	2/1990	Miller
5,134,552 A	7/1992	Call et al.
5,154,432 A	10/1992	Saunders
5,306,020 A	4/1994	Bolf
5,516,857 A	5/1996	Mann
5,688,890 A	11/1997	Ishiguro et al.

(Continued)

- (21) Appl. No.: **14/526,986**
- (22) Filed: **Oct. 29, 2014**

FOREIGN PATENT DOCUMENTS

- (65) **Prior Publication Data**
US 2015/0051028 A1 Feb. 19, 2015

FR	2777647 A1	10/1999
GB	2320207 A	6/1998

OTHER PUBLICATIONS

Archery Talk—Archers Helping Archers Forum: “Homemade Stuff?”, <http://www.archerytalk.com/vb/showthread.php?t=201870&page=48&p=5786267> (2007).

(Continued)

Related U.S. Application Data

- (62) Division of application No. 13/785,862, filed on Mar. 5, 2013, now Pat. No. 9,028,347.
- (60) Provisional application No. 61/621,211, filed on Apr. 6, 2012.

Primary Examiner — John Ricci
(74) *Attorney, Agent, or Firm* — Covington & Burling LLP; Gregory S. Discher; Grant D. Johnson

- (51) **Int. Cl.**
F42B 6/06 (2006.01)
F21V 33/00 (2006.01)

(57) **ABSTRACT**

- (52) **U.S. Cl.**
CPC **F42B 6/06** (2013.01); **F21V 33/008** (2013.01)

A self-centering nock is provided for use in a well-balanced nock-arrow or nock-bolt assembly. The self-centering nock includes compliant projecting protrusions or compliant arms that are substantially rotationally symmetric about a cross section normal to a main axis of the self-centering nock. The compliant projecting protrusions or compliant arms may be received in bolts that have bores of differing internal dimensions.

- (58) **Field of Classification Search**
CPC F42B 6/04; F42B 6/06; F42B 6/08
See application file for complete search history.

- (56) **References Cited**
U.S. PATENT DOCUMENTS

2,484,589 A	10/1949	Richards
2,887,319 A	5/1959	Lay

20 Claims, 8 Drawing Sheets

