



US 20110000577A1

(19) **United States**

(12) **Patent Application Publication**
Bogursky et al.

(10) **Pub. No.: US 2011/0000577 A1**

(43) **Pub. Date: Jan. 6, 2011**

(54) **APPARATUS AND METHODS FOR
FILAMENT CRIMPING AND
MANUFACTURING**

Publication Classification

(51) **Int. Cl.**
B21F 45/00 (2006.01)
B21F 15/02 (2006.01)

(76) **Inventors:** **Robert Bogursky**, Encinitas, CA (US); **Leonid Foshansky**, San Diego, CA (US); **Craig Kennedy**, San Marcos, CA (US); **Darrel Wood, II**, Santee, CA (US); **Mark Saunders**, Boyertown, PA (US)

(52) **U.S. Cl. 140/71 R; 140/111**

(57) **ABSTRACT**

Correspondence Address:
GAZDZINSKI & ASSOCIATES, PC
16644 WEST BERNARDO DRIVE, SUITE 201
SAN DIEGO, CA 92127 (US)

Apparatus and methods for filament crimping. In one embodiment, the apparatus comprises a body and a filament crimp element. The filament crimp element comprises a first set of cavities disposed at a spacing which creates a first set of features and a second set of cavities disposed at a spacing which creates a second set of features. The first and second set cavities are substantially opposite one another. The first set of features are adapted to be placed at least partially within the second set of cavities and the second set of features are adapted to be placed at least partially within the first set of cavities. Methods and apparatus for the manufacture of the device are also disclosed. In addition, methods for automated placement and manufacture of assemblies using the crimp elements are also disclosed.

(21) **Appl. No.: 12/829,208**

(22) **Filed: Jul. 1, 2010**

Related U.S. Application Data

(62) Division of application No. 12/691,562, filed on Jan. 21, 2010, which is a division of application No. 11/473,567, filed on Jun. 22, 2006, now Pat. No. 7,650,914.

