



US008408273B2

(12) **United States Patent**  
**Bonacini**

(10) **Patent No.:** **US 8,408,273 B2**  
(45) **Date of Patent:** **Apr. 2, 2013**

(54) **BEAD BREAKING UNIT FOR TIRE CHANGING MACHINES**

7,500,504 B2 *	3/2009	Bonacini	157/1.17
7,591,295 B2 *	9/2009	Bonacini	157/1.17
2008/0017324 A1 *	1/2008	Bonacini	157/1.28

(75) Inventor: **Maurizio Bonacini**, Correggio (IT)

**FOREIGN PATENT DOCUMENTS**

(73) Assignee: **Giuliano Group S.p.A**, Correggio (RE) (IT)

EP	1 524 134	4/2005
WO	WO 2009/130135	10/2009

**OTHER PUBLICATIONS**

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 243 days.

Italian Search Report dated Jul. 28, 2010.  
European Search Report dated Mar. 18, 2011 in European Patent Application No. EP 10 19 4050.0.

\* cited by examiner

(21) Appl. No.: **12/927,656**

*Primary Examiner* — David B Thomas

(22) Filed: **Nov. 19, 2010**

(74) *Attorney, Agent, or Firm* — Collard & Roe, P.C.

(65) **Prior Publication Data**

US 2011/0139377 A1 Jun. 16, 2011

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

Dec. 16, 2009 (IT) ..... MO2009A0294

The bead breaking unit for tire changing machines includes an arm having a first extremity associated turnable with a support structure and a second extremity having a bead breaking tool, the arm being suitable for oscillating between an away position, wherein the bead breaking tool is positioned substantially at a distance from the support structure, and a work position, wherein the bead breaking tool is positioned substantially close to the support structure, at least an actuator device having a mobile element associated sliding with the arm, at least a drive element for driving the arm, associated with the mobile element and suitable for operating during the movement of the mobile element from an extracted position to a retracted position to move the arm towards the work position and an apparatus of temporary coupling between the mobile element and the arm, suitable for operating during the movement of the mobile element from the retracted position to the extracted position to move the arm from the work position to the away position.

(51) **Int. Cl.**  
**B60C 25/125** (2006.01)

(52) **U.S. Cl.** ..... **157/1.17; 157/1.28**

(58) **Field of Classification Search** ..... **157/1.17, 157/1.24, 1.26, 1.28**

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,226,465 A	7/1993	Schoen et al.	157/1.28
5,381,843 A *	1/1995	Corgi	157/1.28
5,669,429 A *	9/1997	Gonzaga	157/1.24

**15 Claims, 3 Drawing Sheets**

