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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

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Andrei Iancu

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US009956438B2

United States Patent
Iversen et al.(10) **Patent No.:** **US 9,956,438 B2**
(45) **Date of Patent:** **May 1, 2018**(54) **PUNCH DEVICE**(71) **Applicant:** ILR Safety CC, Parktown North (ZA)(72) **Inventors:** Christen Michael Iversen, Surrey (GB); Ivan De Villiers le Roux, Parktown North (ZA)(73) **Assignee:** ILR Safety CC, Parktown North (ZA)(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days. days.(21) **Appl. No.:** 15/312,358(22) **PCT Filed:** May 13, 2015(86) **PCT No.:** PCT/IB2015/053515

§ 371 (c)(1).

(2) **Date:** Nov. 18, 2016(87) **PCT Pub. No.:** WO2015/177686**PCT Pub. Date:** Nov. 26, 2015(85) **Prior Publication Data**

US 2017/0113074 A1 Apr. 27, 2017

US 2018/0064966 A9 Mar. 8, 2018

(30) **Foreign Application Priority Data**

May 19, 2014 (ZA) 2014/03667

(51) **Int. Cl.**
A62B 3/00 (2006.01)(52) **U.S. Cl.**
CPC A62B 3/005 (2013.01)(58) **Field of Classification Search**
CPC A62B 3/005

(Continued)

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Primary Examiner — Sean Michalski(74) *Attorney, Agent, or Firm* — Wolf, Greenfield & Sacks, P.C.(57) **ABSTRACT**

The invention concerns a punch device that includes an actuating member of flat proportions, a penetrating tool with a sharp tip carried by the actuating member, a compressible spacer attached to the surface of the actuating member alongside the penetrating tool and mounting means for mounting the punch device on a glass sheet with the tip of the penetrating tool directed towards the glass sheet. The arrangement is such that a force of sufficient magnitude applied to the actuating member in an axial direction towards the glass sheet compresses the spacer and drives the tip of the penetrating tool into contact with the glass sheet thereby to break the glass sheet. In one application the punch device can be used to break an emergency exit window in a bus.

20 Claims, 8 Drawing Sheets