



US008413380B1

(12) **United States Patent**
Bredl et al.

(10) **Patent No.:** **US 8,413,380 B1**
(45) **Date of Patent:** **Apr. 9, 2013**

(54) **UNIVERSAL SWING HINGE AND GRAVITY-CLOSING GATE ASSEMBLY**

(75) Inventors: **Erich Edwin Bredl**, Houston, TX (US);
Lakshminarasimhan S. Muthu,
Pearland, TX (US)

(73) Assignee: **Intrepid Industries, Inc.**, La Porte, TX
(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.

(21) Appl. No.: **13/465,881**

(22) Filed: **May 7, 2012**

(51) **Int. Cl.**
E05D 7/06 (2006.01)

(52) **U.S. Cl.**
USPC **49/236**

(58) **Field of Classification Search** 49/236,
49/240, 241, 242, 243, 244, 245; 16/309,
16/310, 311

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

350,189 A * 10/1886 Denney 49/240
2,569,836 A * 10/1951 Tilbury 49/245

2,642,683 A * 6/1953 Meyer, Jr. 49/70
3,264,786 A * 8/1966 Nettles 49/70
3,594,853 A * 7/1971 Slattery 16/354
3,848,293 A * 11/1974 Marchione et al. 16/297
4,611,433 A * 9/1986 Heizer, Jr. 49/242
5,592,717 A * 1/1997 Longo 16/367

* cited by examiner

Primary Examiner — Jerry Redman

(74) *Attorney, Agent, or Firm* — Buskop Law Group, PC;
Wendy Buskop

(57) **ABSTRACT**

A universal swing hinge assembly and gravity-closing gate assembly can be attached to a guardrail on either side of a guardrail opening. A hinge pin can be disposed through the universal swing hinge assembly and the gravity-closing gate for attaching the gravity-closing gate thereto. The universal swing hinge assembly can have a C-configuration that allows the gravity-closing gate to swing open in either direction from a lowest neutral position. A recess of the universal swing hinge assembly can have an angled hinge face that opens towards the guardrail opening. In operation, the angled hinge face can cause the gravity-closing gate to rise from the lowest neutral position when the gravity-closing gate is opening, and the angled hinge face can cause the gravity-closing gate to return to the lowest neutral position when closing.

23 Claims, 12 Drawing Sheets

