



US010273646B2

(12) **United States Patent**
Cress(10) **Patent No.:** US 10,273,646 B2
(45) **Date of Patent:** Apr. 30, 2019(54) **GUIDE SYSTEMS AND METHODS FOR
DIESEL HAMMERS**369,176 A 8/1887 Gerstein
400,209 A 3/1889 Haskins
628,962 A 7/1899 Speer

(Continued)

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FOREIGN PATENT DOCUMENTS

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CN 101182714 A 5/2008

(Continued)

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OTHER PUBLICATIONS

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 324 days.USPTO, "Non-Final Office Action, U.S. Appl. No. 15/199,695, p.
218701," dated Sep. 19, 2018, 18 pages.

(Continued)

(21) Appl. No.: **15/376,446**(22) Filed: **Dec. 12, 2016**(65) **Prior Publication Data**

US 2017/0167104 A1 Jun. 15, 2017

Related U.S. Application Data(60) Provisional application No. 62/267,048, filed on Dec.
14, 2015.(51) **Int. Cl.**
E02D 7/12 (2006.01)(52) **U.S. Cl.**
CPC **E02D 7/125** (2013.01)(58) **Field of Classification Search**
CPC E02D 7/125; E02D 7/16; E02D 7/14
USPC 173/90, 91, 210, 128, 133; 405/232, 228,
405/256, 253

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,015 A 3/1847 Ingalls
48,515 A 7/1865 Campbell et al.(57) **ABSTRACT**

A guide system for allowing a diesel hammer to be supported by a plurality of support systems comprises a primary channel system and a pair of first and second channel adapter assemblies. The primary channel system rigidly connected to the diesel hammer to define a pair of primary channels and a primary spacing distance. Each first channel adapter assembly defines a first secondary channel. The guide system operates in a first configuration and a second configuration. In the second configuration, each of the first channel adapter assemblies is detachably attached to the primary channel system such that the first channel adapter assemblies define a first secondary spacing distance between the first secondary channels, the first secondary spacing distance is different from the primary spacing distance, and portions of a second support system of the plurality of support systems are received within the first secondary channels.

16 Claims, 12 Drawing Sheets

Maintenance Fee Notice

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the United States Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

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If the application for this patent was filed on or after June 8, 1995, the term of this patent begins on the date on which this patent issues and ends twenty years from the filing date of the application or, if the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121, 365(c), or 386(c), twenty years from the filing date of the earliest such application ("the twenty-year term"), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b), and any extension as provided by 35 U.S.C. 154(b) or 156 or any disclaimer under 35 U.S.C. 253.

If this application was filed prior to June 8, 1995, the term of this patent begins on the date on which this patent issues and ends on the later of seventeen years from the date of the grant of this patent or the twenty-year term set forth above for patents resulting from applications filed on or after June 8, 1995, subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b) and any extension as provided by 35 U.S.C. 156 or any disclaimer under 35 U.S.C. 253.