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Ruebusch et al.

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(54) **KNUCKLE DESIGN AND SYSTEM OF MAKING**

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B22D 31/002 (2013.01); *Y10T 29/49716*
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(58) **Field of Classification Search**
CPC B24C 1/10; C21D 7/06; B24B 39/006; B21D 31/06; B61G 7/00; Y10T 29/49716
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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 182 days.

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(57) **ABSTRACT**

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Railcar coupling knuckles having areas of improved structure, improved surface characteristics, and reduced stress under loading, and systems and methods for shot peening railcar components such as, but not limited to, coupling knuckles. Such shot-peening systems and methods may include robotic and/or fixed-position shot-peening devices equipped with shot-emitting mechanisms for expelling shot media against desired areas of a railcar component.

(52) **U.S. Cl.**
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18 Claims, 19 Drawing Sheets

