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Lynch et al.

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(54) **ION CONDUCTING ELECTROLYTE BRUSH ADDITIVES**

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(58) **Field of Classification Search** 310/248,
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See application file for complete search history.

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(57) **ABSTRACT**

The present invention's unique utilization of an electrolytic solution renders more efficient the conduction of electricity between two objects (such as two parts of electrical or electromechanical machinery) in relative motion. According to typical inventive practice, the electrolytic solution is a "strong" electrolytic solution of a "dual-valance" nature, including two compatible solute compounds containing electron donor ions and electron acceptor ions. When inventively implemented at the current collector interface, the electrolytic solution serves to improve current transfer across the interface. During machine operation in which a brush (e.g., fiber brush) slidingly contacts a first machine part while being affixed to a second machine part, the inventive additive represents an auxiliary vehicle for conducting electrical current from one machine part to the other machine part. Among the benefits of inventive practice are reduced conduction power losses, reduced friction power losses, and reduced wear rate.

20 Claims, 14 Drawing Sheets

