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- (54) **HIGH FLOW WELD-IN NOZZLE SLEEVE FOR ROCK BITS**
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Related U.S. Patent Documents

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- (52) **U.S. Cl.** **175/393**; 175/424; 175/425
- (58) **Field of Search** 175/340, 393, 175/424, 425, 325.2

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(57)

ABSTRACT

A nozzle sleeve for the retention of replaceable fluid nozzles for rock bits is disclosed. The sleeve is secured within the body of the rock bit. A first upstream end of the sleeve communicates with a fluid plenum formed by the bit body. A second downstream end of this sleeve is adapted to receive the fluid nozzles. An elliptical fluid entrance is formed at the first upstream end of the nozzle sleeve. The elliptical fluid inlet formed by the sleeve serves to increase the flow of fluid to the nozzles, reduce turbulence of the fluid and substantially reduce the erosive effects associated with high fluid velocities and turbulent flow.

40 Claims, 4 Drawing Sheets

