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**Dixon et al.**

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(54) **COMPOSITE HYDROENTANGLING NOZZLE STRIP AND METHOD FOR PRODUCING NONWOVEN FABRICS THEREWITH**  
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(51) **Int. Cl.**

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(57) **ABSTRACT**

(52) **U.S. Cl.** ..... **28/104; 28/167**

(58) **Field of Classification Search** ..... 28/104, 28/105, 167, 106; 239/266, 533, 566, 589, 239/555, 591, 553.3, 553.5, 554, 556, 557  
See application file for complete search history.

A composite nozzle strip for hydroentangling of a fibrous mass is provided to lower nozzle erosion potential and increase operational efficiency. The composite nozzle strip comprises a substrate comprising a material of a first hardness having at least one aperture and at least one orifice element comprising a material of a second hardness greater than the first hardness and further defining an aperture of a second diameter less than the first diameter. The at least one orifice element is affixed to the substrate so that the aperture in the orifice element is aligned with the at least one aperture in the substrate for creation of a constricted water jet when subjected to pressurized water.

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**67 Claims, 11 Drawing Sheets**

