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Miller et al.

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(54) **WIND TURBINE GENERATOR FOR LOW TO MODERATE WIND SPEEDS**

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See application file for complete search history.

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(57) **ABSTRACT**

A 3 megawatt wind turbine generator having a rotor configured to efficiently extract power from low to moderate winds having an average speed of between about 7.5 and 8.5 meters/second is provided. The rotor includes three aerodynamic blades having an aspect ratio of 15 mounted on a modular hub. The relatively shorter and wider aerodynamic blades result in a rotor having a specific power of about 0.27, a specific power rating of about 260 watts/m², and a solidity of about 6%. The modular hub is formed from three interconnected hub sections, each of which formed from a single plate of spring steel bent along its sides into a modular shape. The bends in the plates forming the hub sections act like corrugations that more strongly resist the larger stresses applied to the hub as a result of the relatively shorter and wider aspect of the aerodynamic blades.

20 Claims, 16 Drawing Sheets

