US008816523B2

(12) **United States Patent**
Solazzi

(10) **Patent No.: US 8,816,523 B2**
(45) **Date of Patent: Aug. 26, 2014**

(54) **HORIZONTAL AXIS WIND GENERATOR**

(71) Applicant: **Università degli Studi di Brescia**, Brescia BS (IT)

(72) Inventor: **Luigi Solazzi**, Montichiari (IT)

(73) Assignee: **Universita degli Studi di Brescia**, Brescia BS (IT)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 6 days.

(21) Appl. No.: **13/706,022**

(22) Filed: **Dec. 5, 2012**

(65) **Prior Publication Data**

US 2013/0161960 A1 Jun. 27, 2013

(51) **Int. Cl.**
F03D 9/00 (2006.01)
H02P 9/04 (2006.01)

(52) **U.S. Cl.**
CPC ***F03D 9/002*** (2013.01); *Y02E 10/721* (2013.01); *F05B 2260/402* (2013.01)
USPC **290/55**; 290/44

(58) **Field of Classification Search**
USPC 290/44, 55
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,183,219	A *	5/1916	Manikowske	290/44
1,531,370	A	3/1925	Beavers	290/55
1,944,239	A *	1/1934	Honnef	290/55
4,111,601	A *	9/1978	Richard	416/41
4,319,865	A *	3/1982	Richard	416/41
4,350,895	A *	9/1982	Cook	290/55
4,729,716	A *	3/1988	Schmidt	416/10
4,832,569	A *	5/1989	Samuelsen et al.	416/17
5,591,004	A	1/1997	Aylor	416/42
5,743,712	A *	4/1998	Aylor	416/42
5,765,990	A *	6/1998	Jones	415/2.1
6,064,123	A *	5/2000	Gislason	290/55
7,182,573	B2 *	2/2007	Jonsson	415/183
7,323,791	B2 *	1/2008	Jonsson	290/55
7,385,302	B2 *	6/2008	Jonsson	290/54
7,550,865	B2 *	6/2009	Jonsson	290/55
8,053,919	B1 *	11/2011	Sheth et al.	290/55
8,174,142	B2 *	5/2012	Barber	290/55
8,178,987	B2 *	5/2012	Mahawili	290/44
8,258,645	B2 *	9/2012	Barber	290/55
8,328,515	B2 *	12/2012	Dawoud et al.	416/44
8,421,261	B2 *	4/2013	Drews	290/54
8,496,428	B2 *	7/2013	Richards	415/4.3

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0 035 313 A2	9/1981
GB	2 123 487 A	2/1984
WO	WO 2004/092580 A1	10/2004

Primary Examiner — Pedro J Cuevas
(74) *Attorney, Agent, or Firm* — Alan G. Towner, Esq.; Pietragallo Gordon Alfanso Bosick & Raspanti, LLP

(57) **ABSTRACT**

A horizontal axis wind generator comprises a wind turbine with a plurality of blades, which extend between a first portion at the turbine rotational axis and a second end portion, an electric power generator coupled with the wind turbine and having a rotor adapted to be set in rotation around a rotor rotational axis, motion transmission members for transmitting the rotation energy of the wind turbine to the rotor. The motion transmission members comprise a frame associated with the second end portions of the blades and the rotor is operatively coupled with the frame with an aerodynamic profile both for the inlet and for the outlet of the air flow.

8 Claims, 1 Drawing Sheet