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*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

Therefore, this

## United States Patent

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Director of the United States Patent and Trademark Office



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# United States Patent Lin

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(54) **AUTOMATIC ADJUSTMENT DEVICE FOR ADJUSTING INCLINATION OF BLADES OF WIND TURBINES**

USPC ..... 416/27, 44, 47, 48, 147, 151, 156, 416/157 R, 157 A, 160, 162, 163, 164  
See application file for complete search history.

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(56) **References Cited**  
U.S. PATENT DOCUMENTS

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 648 days.

\* cited by examiner

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(57) **ABSTRACT**

(65) **Prior Publication Data**

An automatic adjustment device for adjusting inclination of blades of wind turbines includes a first housing having multiple blades connected thereto and each blade has a first connection portion which is inserted into the first housing. A transmission unit is connected to the first housing. A pump unit and a speed-changing member are mechanically connected to the transmission unit. The pump unit is mechanically connected to the speed-changing member. The pump unit has a driving unit which is connected with a transmission disk which is connected to the connection portions of the blades. The pump unit is activated by speed difference between the speed-changing member and the transmission unit so as to rotate the transmission disk via the driving unit, and adjust the inclination angle of the blades to protect the blades and increase the efficiency of the wind turbine.

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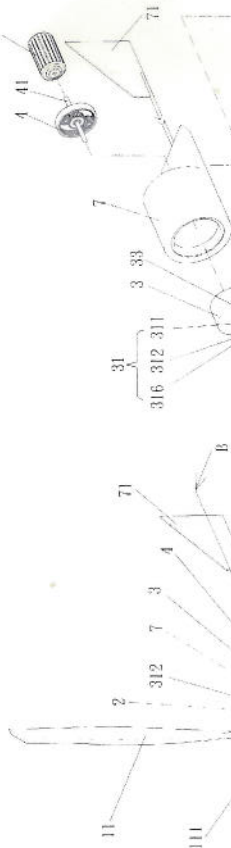
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**CPC** ..... **F03D 7/0204** (2013.01); **F03D 7/0224** (2013.01); **F05B 2260/70** (2013.01); **F05B 2260/74** (2013.01); **Y02E 10/723** (2013.01)

(58) **Field of Classification Search**

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**10 Claims, 21 Drawing Sheets**



## EFEE NOTICE

filed on or after December 12, 1980, and six months, seven years and six after the date of this grant, or within a on payment of a surcharge as provided of the maintenance fees required may be ment of the applicable maintenance fee and Trademark Office on or before the riod of six months thereafter, the patent d.

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d on or after June 8, 1995, the term of his patent issues and ends twenty years r, if the application contains a specific or applications under 35 U.S.C. 120,