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Wind electric machine without stators

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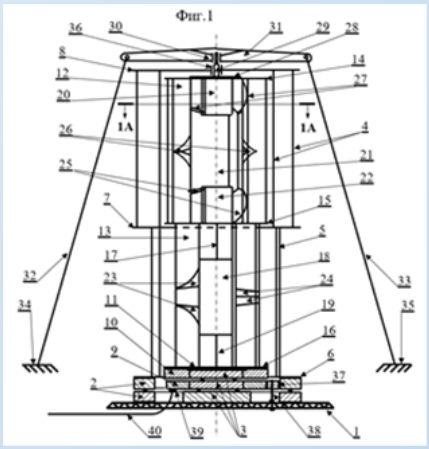
A wind electric machine without stators has been invented, which is used in modern electric power systems (EPS) and serves to convert wind energy into electricity without using wind and electrical stators. A patent was issued for the invention in Bulgaria.
Application № 113063



Many modifications of S (Savonius) and disc wind rotors are known, but they are rarely used as motors in actual operating installations. The reasons are the fluctuating torque, lower rotational speed, lower power coefficient Cp and lower energy yield compared to modern horizontal axis turbines. Many inventors are actively researching improvements aimed at overcoming these weaknesses. The question of the appropriate construction of the electric generator is also essential. Traditional electric generators consist of a stator and a rotor, but there are varieties with disk rotors as well as counter-rotating rotors.

Technical solution

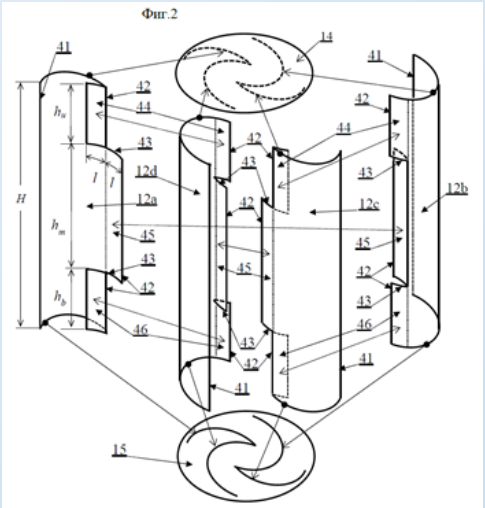
The invention presents a wind electric machine with improved characteristics in terms of wind energy conversion efficiency, constant torque and reduced torsional load on the supporting structure. This is achieved through two concentric wind rotors - outer and inner. The two floors of the inner, as well as the two floors of the outer wind rotor, differ only in that the blades of the lower floor are installed 45˚ further in the direction of rotation than the blades of the upper floor. The height of each floor of the inner rotor is divided into three sections. Each section of the space between each pair of adjacent blades contains a duct or diverter, respectively, formed as described in the patent.

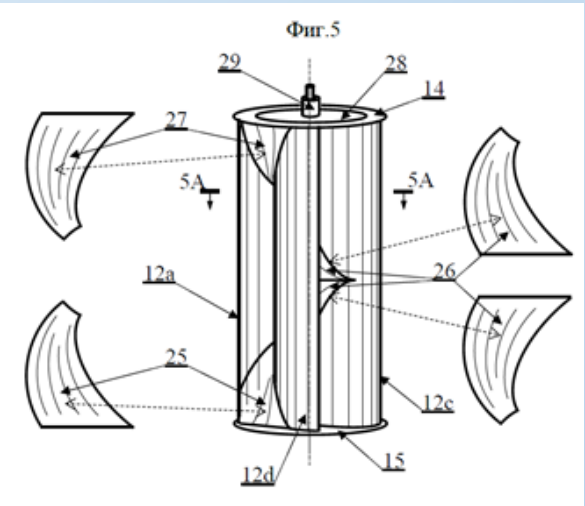
Application and advantages

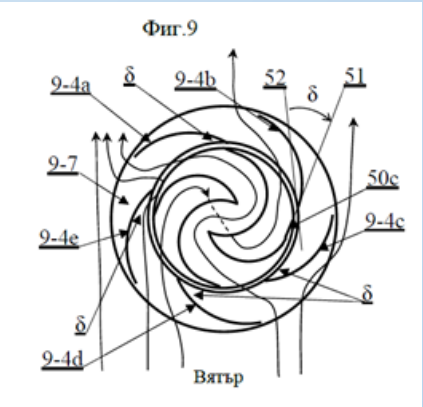
The invented machine is effective at low wind speeds. It is suitable for installation on roofs of buildings, and has the following advantages:

1. Converts wind energy into electricity without wind and electric stators. This feature reduces the torsional load on the supporting structure, which is of great importance when used on roofs of existing buildings.
2. By increasing the number and size of the floors, the total power of the machine can be increased in proportion to the cross-sectional area of the wind motor.
3. It produces increased torque with less fluctuation compared to known machines using S rotors. The machine starts spinning and producing electricity at a lower wind speed. Gusts of wind cause relatively less variation in rotational speed. With the same dimensions of the proposed machine and the known devices, the power factor Cp (the absorbed power, respectively the amount of electricity produced) is greater.

Technological images







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