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WIND RESISTANCE BRAKING POWER GENERATION SYSTEM APPLIED TO VEHICLES.

(57)

The invention provides a wind resistance braking power generation system applied to vehicles, comprising wind resistance blades, wherein a plurality of wind resistance blades are provided and embedded in the top and bottom of a vehicle body; when the wind resistance blades extend to the outside of the vehicle, the wind resistance during the vehicle driving is received to assist braking; a power generation mechanism is provided on the wind resistance blades to generate electricity using the kinetic energy of the wind resistance. When the wind resistance blades of the invention are extended, the kinetic energy of the wind resistance can be effectively used to assist braking and slow down the speed of the vehicle. The invention combines a generator, a rectifier, a controller, a battery pack, and a blade assembly. When the wind resistance blades are extended out of the vehicle body, the oncoming wind energy is converted into electrical energy to supplement the additional power supply for the vehicle. This is particularly suitable for the increasingly popular electric vehicles, so that the newly generated electrical energy can directly provide additional power for the vehicle.

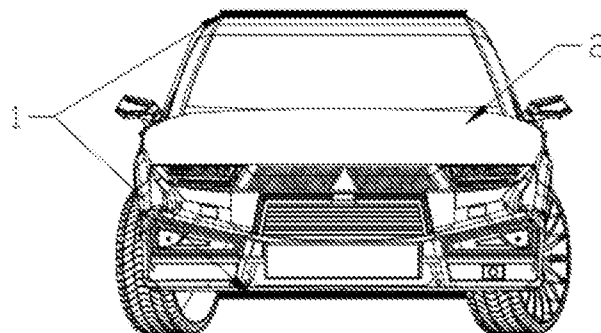


FIG. 1

WIND RESISTANCE BRAKING POWER GENERATION SYSTEM APPLIED TO VEHICLES

TECHNICAL FIELD

The invention relates to the technical field of wind resistance braking power generation, and in particular to a wind resistance braking power generation system applied to vehicles.

BACKGROUND ART

Wind resistance is an important factor that affects the speed of a car. For a long time, people have regarded wind resistance as an unfavorable factor and have been working hard to study how to reduce the car's wind resistance coefficient in order to increase the car's speed and reduce the car's overall energy consumption.

With the improvement of the performance of vehicles including automobiles, ships and airplanes, the wind resistance coefficient is getting smaller and smaller, that is to say, the wind resistance of the car is already very small during driving, which means that deceleration and stopping require enhanced braking. Vehicles such as cars cannot avoid deceleration and stopping during driving, and at this time, automobile brakes are needed to achieve this. The known automobile brake device is a wheel automobile brake device composed of a brake pedal, a booster pump, a master cylinder, a hydraulic pipeline, a brake disc or a brake drum. However, when only using this brake device, the braking distance is long when the car speed is very high and the wind resistance coefficient is small, and rear-end collisions may also occur, which is easy to cause accidents.

Wind resistance also has an advantage. When a car is at high speed and emergency braking, people hope to use wind resistance to assist braking, thereby reducing the car's speed and minimizing the braking distance of the car. This system uses wind resistance to generate wind power and assist braking when the vehicle needs to slow down. By converting wind power into electricity to charge the vehicle body, it not only provides additional energy support for the vehicle's electronic equipment, but also helps reduce dependence on traditional fuel energy, reduce the overall energy consumption of the vehicle, and contribute to

environmentally friendly travel.

SUMMARY OF THE INVENTION

In view of this, in order to solve the problem that when a vehicle needs to slow down, the oncoming wind is used to realize wind power generation and assist braking when braking, and the vehicle body is charged by converting wind power into electricity, the invention proposes a wind resistance braking power generation system applied to vehicles, and the specific technical solution is as follows:

A wind resistance braking power generation system applied to vehicles, comprising wind resistance blades, wherein a plurality of wind resistance blades are provided and embedded in the top and bottom of a vehicle body; when the wind resistance blades extend to the outside of the vehicle, the wind resistance during the vehicle driving is received to assist braking; a power generation mechanism is provided on the wind resistance blades to generate electricity using the kinetic energy of the wind resistance.

Further, the power generation mechanism comprises a generator, a rectifier, a controller, a battery pack, and a blade assembly; the blade assembly is connected to the generator in transmission, the generator is electrically connected to the rectifier, the rectifier is electrically connected to the controller, and the controller is electrically connected to the battery pack.

Further, the rear of the wind resistance blades is provided with a rack plate, and the rack plate is meshed with a moving wheel; the rotating of the moving wheel drives the rack plate to move up and down.

Further, the direction of the wind resistance is perpendicular to the direction of the wind resistance blades.

Further, the height of the wind resistance blades extending out of the vehicle body is 5-10 centimeters.

Further, the vehicle body is provided with a cover corresponding to the outer shell of the wind resistance blades, and one end of the cover can be rotatably connected to the vehicle body; the wind resistance blades are hidden in the vehicle body and covered by the cover; the cover does not change the streamlined shape of the whole vehicle.

Further, the wind resistance blades are electrically connected to the brake system of the

vehicle; when the brake is pressed, the wind resistance blades extend out and act on the brake system of the vehicle at the same time.

By adopting the above technical solutions, the invention has the following beneficial effects.

1. When the wind resistance blades of the invention are extended, the kinetic energy of the wind resistance can be effectively used to assist braking and slow down the speed of the vehicle.

2. The invention combines a generator, a rectifier, a controller, a battery pack, and a blade assembly. When the wind resistance blades are extended out of the vehicle body, the oncoming wind energy is converted into electrical energy to supplement the additional power supply for the vehicle. This is particularly suitable for the increasingly popular electric vehicles, so that the newly generated electrical energy can directly provide additional power for the vehicle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic front view of the structure of the wind resistance braking power generation system applied to vehicles according to Embodiment 1 of the invention;

FIG. 2 is a schematic side view of the structure of the wind resistance braking power generation system applied to vehicles according to Embodiment 1 of the invention;

FIG. 3 is a schematic structural diagram of the specific connection method of the wind resistance braking power generation system applied to vehicles according to Embodiment 1 of the invention.

In the figures: 1 refers to the wind resistance blade; 2 refers to the vehicle body; 11 refers to the battery pack; 12 refers to the generator; 13 refers to the moving wheel; 14 refers to the rack plate; 15 refers to the blade assembly; 16 refers to the cover.

SPECIFIC EMBODIMENTS OF THE INVENTION

The technical solutions in the embodiments of the invention will be clearly and completely described hereinafter with reference to the drawings in the embodiments of the invention. Obviously, the described embodiments are only a part of the embodiments of the invention, rather than all the embodiments. Based on the embodiments of the invention, all

other embodiments obtained by those of ordinary skill in the art without creative efforts shall fall within the protection scope of the invention.

Embodiment 1: the system is applied in a car, as shown in FIG. 1, FIG. 2, and FIG. 3, comprising wind resistance blades 1, wherein a plurality of wind resistance blades 1 are provided and embedded in the top and bottom of a vehicle body 2; when the wind resistance blades 1 extend to the outside of the vehicle, the wind resistance during the vehicle driving is received to assist braking; a power generation mechanism 2 is provided on the wind resistance blades 1 to generate electricity using the kinetic energy of the wind resistance.

The power generation mechanism comprises a generator 12, a rectifier, a controller, a battery pack 11, and a blade assembly 15; the blade assembly 15 is connected to the generator 12 in transmission, the generator 12 is electrically connected to the rectifier, the rectifier is electrically connected to the controller, and the controller is electrically connected to the battery pack 11.

The rear of the wind resistance blades 1 is provided with a rack plate 14, and the rack plate 14 is meshed with a moving wheel 13; the rotating of the moving wheel 13 drives the rack plate 14 to move up and down.

The direction of the wind resistance is perpendicular to the direction of the wind resistance blades 1, and the height of the wind resistance blades 1 extending out of the vehicle body 2 is 8 centimeters. The vehicle body 2 is provided with a cover 16 corresponding to the outer shell of the wind resistance blades. When the wind resistance blades 1 are not in use, the wind resistance blades 1 are hidden in the vehicle body 2 and covered by the cover 16. The cover 16 does not change the streamlined shape of the whole vehicle and does not affect the appearance of the vehicle body 2. One end of the cover 16 can be rotatably connected to the vehicle body 2.

The wind resistance blades 1 are electrically connected to the brake system of the vehicle; when the brake is pressed, the wind resistance blades 1 extend out and act on the brake system of the vehicle at the same time.

Embodiment 2: the system is applied in an aircraft, comprising wind resistance blades 1, wherein a plurality of wind resistance blades 1 are provided and embedded in the top and bottom of a vehicle body 2; when the wind resistance blades 1 extend to the outside of the

aircraft, the wind resistance during the aircraft driving is received to assist braking; a power generation mechanism 2 is provided on the wind resistance blades 1 to generate electricity using the kinetic energy of the wind resistance.

The power generation mechanism comprises a generator 12, a rectifier, a controller, a battery pack 11, and a blade assembly 15; the blade assembly 15 is connected to the generator 12 in transmission, the generator 12 is electrically connected to the rectifier, the rectifier is electrically connected to the controller, and the controller is electrically connected to the battery pack 11.

The rear of the wind resistance blades 1 is provided with a rack plate 14, and the rack plate 14 is meshed with a moving wheel 13; the rotating of the moving wheel 13 drives the rack plate 14 to move up and down.

The direction of the wind resistance is perpendicular to the direction of the wind resistance blades, and the height of the wind resistance blades 1 extending out of the vehicle body 2 is 10 centimeters. The vehicle body 2 is provided with a cover 16 corresponding to the outer shell of the wind resistance blades. When the wind resistance blades 1 are not in use, the wind resistance blades 1 are hidden in the vehicle body 2 and covered by the cover 16. The cover 16 does not change the streamlined shape of the whole vehicle and does not affect the appearance of the vehicle body 2. One end of the cover 16 can be rotatably connected to the vehicle body 2.

The wind resistance blades 1 are electrically connected to the brake system of the aircraft; when the brake is pressed, the wind resistance blades extend out and act on the brake system of the aircraft at the same time.

The wind resistance blades 1 of Embodiment 1 and Embodiment 2 are embedded in the front face of the vehicle body 2 and the interior of the chassis, and the wind resistance blades 1 are plates made of metal. The rear of the wind resistance blades 1 is provided with a rack plate 14, and the rack plate 14 is meshed with a moving wheel 13. When the moving wheel 13 rotates, it drives the rack plate 14 to move up and down, thereby driving the wind resistance blades 1 to move up and down. When the wind resistance blades 1 move upward, the wind resistance blades 1 extend out of the vehicle to assist braking; when the wind resistance blades 1 move downward, the wind resistance blades 1 are retracted into the vehicle body 2.

The cover 16 is in the shape of a plate, and the material and color of the cover 16 are the same as the overall color of the vehicle body 2, which does not affect the appearance. The cover 16 covers the vehicle body 2, thereby hiding the wind resistance blades inside the vehicle body 2. The cover 16 is connected to the vehicle body 2 through a torsion bar, and this connection method is the same as the connection method of the trunk of the vehicle body 2. The moving wheel is connected to the brake system of the vehicle. When the brake system is in operation, the cover opens vertically without affecting the extension of the wind resistance blades. The rotation of the moving wheel drives the wind resistance blades to rise.

The specific working principle of the invention is as follows: during auxiliary braking, when the car needs to slow down, the brake is pressed, the cover 16 opens, and the moving wheel 13 drives the rack plate 14 to extend the wind resistance blades 1 to perform auxiliary braking through the wind resistance;

when generating electricity, the wind resistance blades 1 are extended out of the vehicle, and the blade assembly 15 is a wind blade. The blade assembly 15 rotates to drive the generator 12 to generate electricity, and the electricity is stored in the battery pack 11 after passing through the rectifier and the controller. When the wind resistance blades 1 are extended out of the vehicle body 2, the oncoming wind energy is converted into electrical energy to supplement the vehicle with additional electrical energy. The auxiliary brake and power generation work at the same time. Only when the wind resistance blades are extended can power generation and auxiliary brake be performed. When the wind resistance blades 1 are hidden in the vehicle body 2, the vehicle can travel normally.

1. A wind resistance braking power generation system applied to vehicles, comprising wind resistance blades, wherein a plurality of wind resistance blades are provided and embedded in the top and bottom of a vehicle body; when the wind resistance blades extend to the outside of the vehicle, the wind resistance during the vehicle driving is received to assist braking; a power generation mechanism is provided on the wind resistance blades to generate electricity using the kinetic energy of the wind resistance.

2. The wind resistance braking power generation system applied to vehicles according to claim 1, wherein the power generation mechanism comprises a generator, a rectifier, a controller, a battery pack, and a blade assembly; the blade assembly is connected to the generator in transmission, the generator is electrically connected to the rectifier, the rectifier is electrically connected to the controller, and the controller is electrically connected to the battery pack.

3. The wind resistance braking power generation system applied to vehicles according to claim 1, wherein the rear of the wind resistance blades is provided with a rack plate, and the rack plate is meshed with a moving wheel; the rotating of the moving wheel drives the rack plate to move up and down.

4. The wind resistance braking power generation system applied to vehicles according to claim 3, wherein the height of the wind resistance blades extending out of the vehicle body is 5-10 centimeters.

5. The wind resistance braking power generation system applied to vehicles according to claim 1, wherein the vehicle body is provided with a cover corresponding to the outer shell of the wind resistance blades, and one end of the cover can be rotatably connected to the vehicle body; the wind resistance blades are hidden in the vehicle body and covered by the cover; the cover does not change the streamlined shape of the whole vehicle.

6. The wind resistance braking power generation system applied to vehicles according to any one of claims 1, 3, 4, wherein the wind resistance blades are electrically connected to the brake system of the vehicle; when the brake is pressed, the wind resistance blades extend out and act on the brake system of the vehicle at the same time.

Schutzansprüche

1. Windwiderstandsbremsstromerzeugungssystem für Fahrzeuge, wobei es Windwiderstandsblätter umfasst, wobei mehrere Windwiderstandsblätter vorgesehen und in die Ober- und Unterseite einer Fahrzeugkarosserie eingebettet sind; wenn sich die Windwiderstandsblätter zur Außenseite des Fahrzeugs erstrecken, wird der Windwiderstand während des Fahrens des Fahrzeugs aufgenommen, um das Bremsen zu unterstützen; ein Stromerzeugungsmechanismus ist an den Windwiderstandsblättern vorgesehen, um Strom unter Verwendung der kinetischen Energie des Windwiderstands zu erzeugen.

2. Windwiderstandsbremsstromerzeugungssystem für Fahrzeuge nach Anspruch 1, wobei der Stromerzeugungsmechanismus einen Generator, einen Gleichrichter, einen Controller, einen Batteriesatz und eine Blattbaugruppe umfasst; die Blattbaugruppe ist mit dem Generator in Transmission verbunden, der Generator ist elektrisch mit dem Gleichrichter verbunden, der Gleichrichter ist elektrisch mit dem Controller verbunden, und der Controller ist elektrisch mit dem Batteriesatz verbunden.

3. Windwiderstandsbremsstromerzeugungssystem für Fahrzeuge nach Anspruch 1, wobei die Rückseite der Windwiderstandsblätter mit einer Zahnstangenplatte versehen ist und die Zahnstangenplatte mit einem beweglichen Rad in Eingriff steht; die Drehung des beweglichen Rades treibt die Zahnstangenplatte an, sich auf und ab zu bewegen.

4. Windwiderstandsbremsstromerzeugungssystem für Fahrzeuge nach Anspruch 3, wobei die Höhe der aus der Fahrzeugkarosserie herausragenden Windwiderstandsblätter 5-10 Zentimeter beträgt.

5. Windwiderstandsbremsstromerzeugungssystem für Fahrzeuge nach Anspruch 1, wobei die Fahrzeugkarosserie mit einer Abdeckung versehen ist, die der Außenhülle der Windwiderstandsblätter entspricht, und ein Ende der Abdeckung drehbar mit der Fahrzeugkarosserie verbunden werden kann; die Windwiderstandsblätter sind in der Fahrzeugkarosserie verborgen und durch die Abdeckung abgedeckt; die

Abdeckung verändert die Stromlinienform des gesamten Fahrzeugs nicht.

6. Windwiderstandsbremstromerzeugungssystem für Fahrzeuge nach einem der Ansprüche 1, 3 und 4, wobei die Windwiderstandsblätter elektrisch mit dem Bremssystem des Fahrzeugs verbunden sind; wenn die Bremse betätigt wird, fahren die Windwiderstandsblätter aus und wirken gleichzeitig mit dem Bremssystem des Fahrzeugs zum Bremsen.

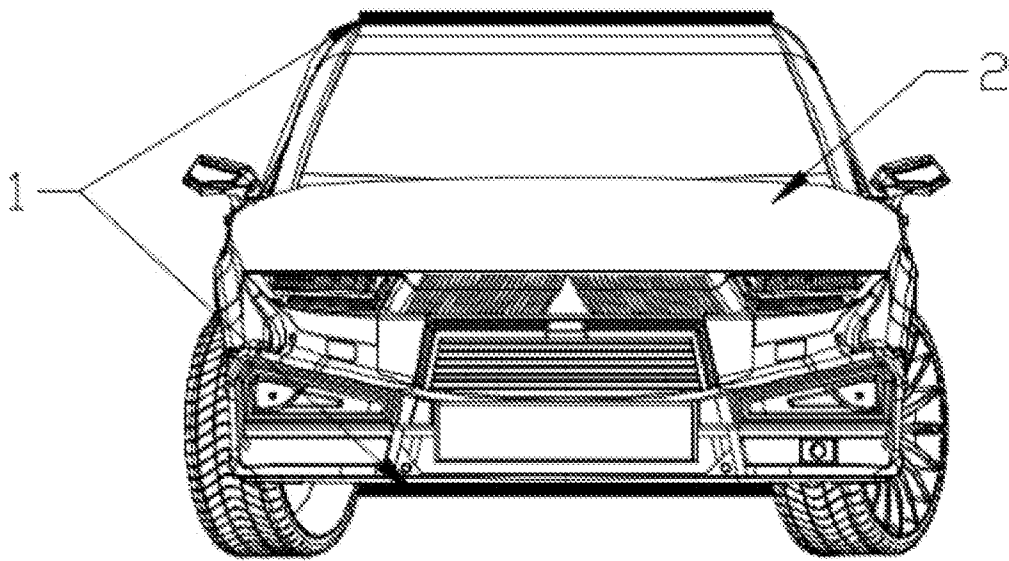


FIG. 1

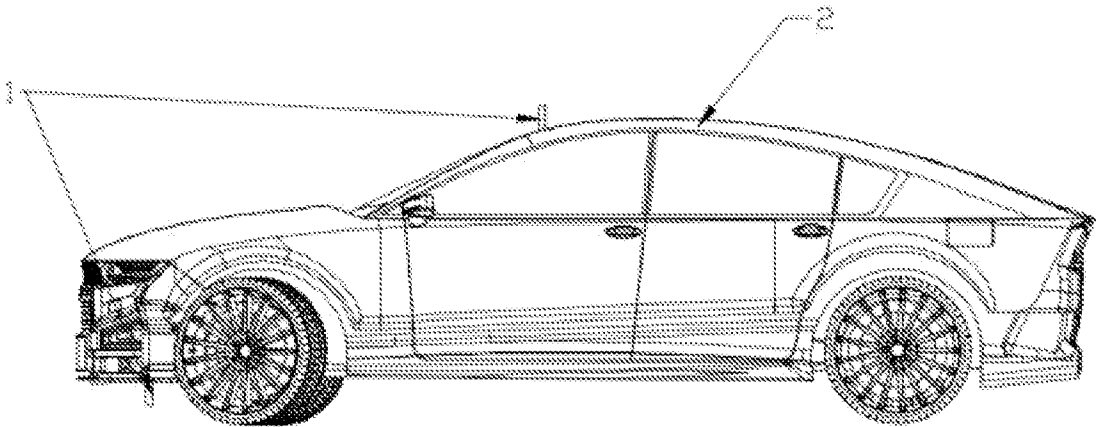


FIG. 2

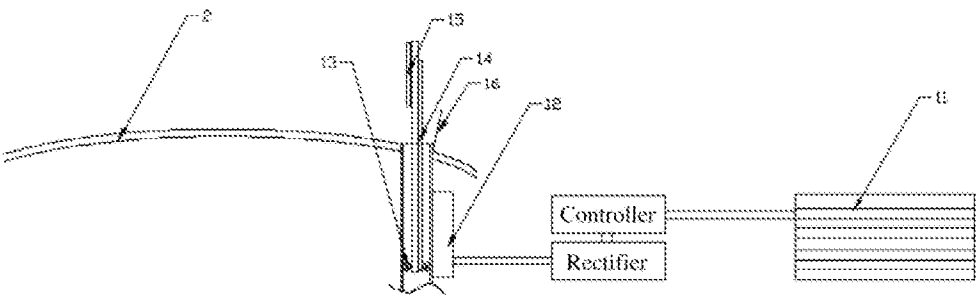


FIG. 3