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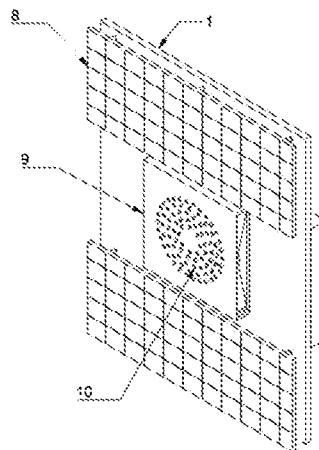
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ASSEMBLED EXTERIOR WALL DECORATIVE PANEL BASED ON INTEGRATED UTILIZATION OF LIGHT ENERGY AND WIND ENERGY.

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The present invention discloses an assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy, which includes a decorative panel body, where an integrated box is installed in the middle of the back of the decorative panel body through fasteners, a generator set is installed in the middle of the inner cavity of the integrated box, a rotating shaft is installed at the end position of the generator set, and power generation fan blades are installed on the outer ring of the rotating shaft. Through the design and use of the wind turbines, power generation blades, storage batteries and inverters, the assembled external wall thermal insulation decorative panel for wind energy utilization may generate wind power for the electrical equipment on the building when it is subjected to wind power.



DESCRIPTION

ASSEMBLED EXTERIOR WALL DECORATIVE PANEL BASED ON INTEGRATED UTILIZATION OF LIGHT ENERGY AND WIND ENERGY

TECHNICAL FIELD

The invention belongs to the field of exterior wall decorative panels, in particular to an assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy.

BACKGROUND

Exterior wall thermal insulation decorative panel, also known as exterior wall thermal insulation panel, exterior wall panel, metal curtain wall panel, etc., is a large-format hanging wallpanel produced industrially, which integrates exterior wall thermal insulation function and exterior wall decoration function. It is installed on the exterior surface of the building on site and installed by dry method.

The existing thermal insulation decorative panel products are very single in structure and function. By using high thermal resistance materials to make the thermal barrier layer, and then using the external wall thermal insulation decorative panel to block the indoor temperature, so that more heat can be stored indoors in winter, the room temperature is stable, and the free heat generated indoors can be utilized. In summer, the external thermal insulation layer can reduce the comprehensive influence of solar radiation and high temperature, and the surface temperature of the external wall and the indoor temperature can be reduced.

In the prior art, there is also a technical scheme to upgrade and improve the thermal insulation decorative panel, which is similar to the prior art:

CN113338563A, an external wall thermal insulation decorative panel;

CN106545139A, a decorative panel for thermal insulation exterior wall;

CN104746827A, luminous thermal insulation decorative panel for external wall.

There are many schemes similar to the above-mentioned prior art, but fundamentally, all of them are to improve and optimize the performance of thermal insulation decorative panels. When used on the external walls of buildings, their ultimate functions and

effects are nothing more than thermal insulation, waterproof and sun protection, and the final roles and functions have not changed much. LU507780

For buildings, when a building is completed and put into use, it is often necessary to add various electrical equipment at various positions such as its walls, roofs and corridors. When these electrical equipment are used at work, the circuits inside the building are connected, i.e., the electricity consumed in daily use is the electricity inside the building, and when they are put into use later, the electricity consumed by these electrical equipment is extremely huge.

In view of this, the present invention is hereby proposed.

SUMMARY

The technical problem to be solved by the invention is to overcome the shortcomings of the prior art and provide an assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy, thus solving the problems raised in the above background technology.

In order to solve the technical problems, the basic idea of the technical scheme used by the invention is as follows:

An assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy includes a decorative panel body, where an integrated box is installed in the middle of the back of the decorative panel body through fasteners, a generator set is installed in the middle of the inner cavity of the integrated box, a rotating shaft is installed at the end position of the generator set, and power generation fan blades are installed on the outer ring of the rotating shaft.

Preferably, one side of the inner cavity of the integrated box is provided with an inverter, and the other side of the inner cavity of the integrated box is provided with a storage battery.

Preferably, the generator set is electrically connected with the inverter through wires, and the inverter is electrically connected with the storage battery through wires.

Preferably, one end of the rotating shaft penetrates through the decorative panel body and extends to the other side of the decorative panel body, and the decorative panel body is butted and installed with the external wall of the building through the keel skeleton structure.

Preferably, photovoltaic panels are installed at the upper and lower ends of the side surface of the decorative panel body through fasteners, and the photovoltaic panels are electrically connected with the inverter through connection points.

Preferably, the middle part of the side face of the decorative panel body is provided with a fan cover structure, and the front face of the fan cover structure is provided with ventilation holes.

Preferably, the ventilation holes are tapered holes, and one end with a small diameter faces towards one side of the power generation fan blades, and the coverage area of the ventilation holes is larger than the overall area of the power generation fan blades. Preferably, the two sides of the fan cover structure are of an open design, the fan cover structure is provided with wind collecting covers at the open positions on both sides, and one end of the wind collecting covers located in the inner cavity of the fan cover structure is butted with air ducts.

Preferably, the surface of the power generation fan blades is fixedly connected with impact blocks, and the impact blocks are arc blocks in a hollow state, and the opening end of the impact blocks face towards the air outlet position of the air ducts.

With the adoption of the above technical schemes, the present invention has the following beneficial effects over the prior art, although, of course, the implementation of any of the products of the present invention does not necessarily need to achieve all of the advantages described below at the same time:

1. Through the design and use of the wind turbines, power generation blades, storage batteries and inverters, the assembled external wall thermal insulation decorative panel for wind energy utilization may generate wind power for the electrical equipment on the building when it is subjected to wind power.
2. Through the design and use of the decorative panel body, photovoltaic panels, inverters and storage batteries, the assembled exterior wall thermal insulation decorative panel may increase the function of solar power generation for the exterior wall thermal insulation decorative panel when it is actually used, and the technical scheme of wind power generation may ensure the power generation of the entire exterior wall thermal insulation decorative panel, i.e., ensure the electricity consumption of electrical equipment on the building.
3. through the use of the fan cover structure and the ventilation holes in coordination with the wind generator set and the power generation fan blades, the assembled external wall thermal insulation decorative panel for wind energy utilization may make the external wall thermal insulation decorative panel located on the external wall of a building mechanically compress the wind through the tapered ventilation holes under the condition of wind, even if it is a breeze, so as to increase the acting force acting on the power generation fan blades and ensure that wind power generation can take place.

4. Through the design and use of the fan cover structure, the hollow pyramid-shaped wind collecting covers, the air ducts and the impact blocks on the power generation fan blades, the assembled external wall thermal insulation decorative panel may make the wind parallel to the external wall thermal insulation decorative panel also accurately act on the power generation fan blades, and through the use of the impact blocks and the air ducts with air outlets facing towards the power generation fan blades, more wind can act on the power generation fan blades, ensuring that the wind blowing from the side can realize wind power generation. LU507780

5. Through the design and use of the external wall thermal insulation decorative panel for wind energy utilization, the assembled external wall thermal insulation decorative panel can supply power for power equipment in daily power generation with the power facilities of the building itself, which may greatly reduce the load of the power supply line of the building, and at the same time, it may obviously achieve the purpose of saving electricity when used for a long time, which is more environmentally friendly and energy saving.

The specific embodiments of the present invention will be described in further detail below with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE FIGURES

The attached drawings in the following description are only some embodiments, and other drawings can be obtained according to these drawings without creative work for ordinary people in the field. In the attached drawings:

Fig. 1 is a schematic structural diagram of the present invention;

Fig. 2 is a rear view of the structure of the present invention;

Fig. 3 is a rear view of the fan cover structure of the present invention;

Fig. 4 is a schematic structural diagram of the power generation fan blades of the present invention;

Fig. 5 is an exploded view of the fan cover structure of the present invention.

In the attached drawings, the list of components represented by each reference number is as follows:

1. Decorative panel body; 2. Integrated box; 3. Generator set; 4. Rotating shaft; 5. Power generation fan blades; 6. Inverter; 7. Storage battery; 8. Photovoltaic panel; 9. Fan cover structure; 10. Ventilation hole; 11. Impact block; 12. Wind collecting cover; 13. Air duct.

It should be noted that these drawings and written descriptions are not intended to limit the conceptual scope of the invention in any way, but to explain the concept of the invention to those skilled in the art by referring to specific embodiments. LU507780

DESCRIPTION OF THE INVENTION

The present invention will now be described in further detail with reference to the attached drawings.

Embodiment 1

Referring to Figs. 1 - 5, in this embodiment, an assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy is provided, which includes a decorative panel body 1, where the existing decorative panel material can be used as the main body. As shown in Fig. 2, an integrated box 2 is installed in the middle of the back of the decorative panel body 1 through fasteners, and a wind turbine generator set 3 is installed in the middle of the inner cavity of the integrated box 2. As shown in Fig. 4, the front position of the wind turbine generator set 3 is installed with a rotating shaft 4, and power generation fan blades 5 are sleeved on the outer ring of the rotating shaft 4. The integrated box 2 is installed in the middle of the back of the decorative panel body 1 through fasteners, which makes the whole system compact and stable. The wind turbine generator set 3 is installed in the middle of the inner cavity of the integration box 2, which optimizes the space utilization and ensures the effective integration of all components. The front of the wind turbine generator set 3 is provided with a rotating shaft 4, and power generation fan blades 5 are sleeved on the outer ring of the rotating shaft 4, so that the wind can effectively drive the power generation fan blades 5 to rotate and realize efficient conversion of wind energy into electric energy. The overall structure is simple and the function distribution is reasonable, which is helpful to improve the power generation efficiency and the durability of the device, and is also convenient for maintenance and installation.

According to the application, wind power generation and photovoltaic power generation components are integrated into the decorative panel, so that extra space is not occupied, and the decorative panel is closely combined with the decorative panel body, so that the beauty and the function are unified; the innovative design of the fan cover structure is a major highlight. The tapered ventilation holes can effectively gather and compress the wind power under the condition of light wind, while the pyramid-shaped wind collecting covers and air ducts can accurately guide the sideways wind power to the power generation fan blades, which greatly expands the available wind power

range. The hollow arc impact blocks on the power generation fan blades may fully bear the wind power and improve the efficiency of energy conversion. LU507780

In terms of energy utilization, the abundant wind energy and sufficient solar energy at high altitude are fully utilized, which realizes the complementarity of the two clean energy sources and greatly improves the stability and sustainability of energy supply; through efficient inverter and large-capacity battery, the effective conversion and storage of electric energy are realized, and the reliability of power output is ensured. Where, one end of the rotating shaft 4 penetrates through the decorative panel body 1 and extends to the other side of the decorative panel body 1. Here, the extending rotating shaft 4 is designed mainly to enable the power generation fan blades 5 to be located on the other side of the decorative panel body 1, i.e., in the inner cavity of the fan cover structure 9 on the whole decorative panel.

As shown in Fig. 2, where, an inverter 6 is installed on one side of the inner cavity of the integrated box 2, and a storage battery 7 is installed on the other side of the inner cavity of the integrated box 2. In this technical scheme, the storage battery 7 is provided with a power output port for connecting wires, so as to supply the power stored in the storage battery 7 to power facilities. The storage battery 7 is equipped with a power output port, which is convenient for wire connection, and transmits the power stored in the storage battery 7 to the power facilities of the building to ensure the effective use of electric energy.

Where, the wind turbine generator set 3 is electrically connected with the inverter 6 through wires, and the inverter 6 is electrically connected with the storage battery 7 through wires. The wind turbine generator set 3 is electrically connected with the inverter 6 through wires. This design ensures that the alternating current (AC) energy generated by wind power generation is converted into stable direct current (DC) energy at the first time, which is suitable for the storage requirements of the battery. The inverter 6 and the storage battery 7 are also connected by wires, so that the converted electric energy can be quickly and effectively stored in the storage battery to avoid the loss of electric energy. Through this efficient circuit design, the loss of electric energy in the process of transmission and conversion can be minimized, and each unit of wind energy can be effectively utilized and stored. This design not only ensures the stable operation of the whole system and avoids the fluctuation of power output, but also ensures that the storage battery can get enough power input under different working conditions, which improves the overall efficiency and reliability of the system.

The AC generated by the wind turbine first enters the inverter. The inverter rectifies AC into DC. This process involves converting the positive and negative half waves of current into a single DC. The inverter regulates the output voltage and current, and enters the stable DC into the storage battery, which stores the electric energy chemically. When the exterior wall panels are at night or in a windless state, the storage battery converts the stored electric energy into DC for output, and then converts it into AC through the inverter for use in buildings.

Where, the decorative panel body 1 is installed on the external wall of the building through the keel skeleton structure, and the minimum width of the used keel skeleton is the length of the protruding part of the integrated box 2., which ensures the stability and beauty of installation.

In this embodiment, when the external wall thermal insulation decorative panel is installed on the external wall of a building through the keel skeleton structure, especially the external wall thermal insulation decorative panel located in a high position, there will always be wind in the sky, so when the wind blows to the external wall thermal insulation decorative panel, part of the wind will act on the power generation fan blades 5, and then drive the power generation fan blades 5 to rotate, so that the wind generator set 3 can generate wind power, and the generated power is stored by the storage battery 7, and the power generated by the wind generator set 3 can be used for the electrical equipment on the building.

Embodiment 2

As shown in Fig. 1, the exterior wall thermal insulation decorative panel mainly includes a decorative panel body 1, and photovoltaic panels 8 are installed at the upper and lower positions on the side of the decorative panel body 1 through fasteners, and the photovoltaic panels 8 are electrically connected with the inverter 6 through wires.

In this embodiment, on the basis of Embodiment 1, i.e., when the whole exterior wall thermal insulation decorative panel is installed on the exterior wall of a building through a keel skeleton, the photovoltaic panels 8 can also receive the sunlight in daily use, and then convert the solar energy into electric energy, which can be stored in the storage battery 7, and the generated electricity can be used for the lighting of electrical equipment on the building, such as lighting lamps. With the power generation mode of the wind turbine generator set 3 in Embodiment 1, the power generation of the exterior wall thermal insulation decorative panel can be improved, i.e., the use on the building can be guaranteed.

In this technical scheme, the top end and bottom end of the integrated box 2 are both provided with wire hole structures for the wires to pass in and out, i.e., the photovoltaic panels 8 are used to connect the wires of the inverter 6, and the wires led out from the storage battery 7 are routed through the wire hole structures, and the wire hole structures are blocked by rubber seals after routing, so as to prevent impurities or rainwater from entering and causing component damage. LU507780

Where, the direct use of inverter and storage battery can refer to the existing technology of solar power generation.

Embodiment 3

As shown in Fig. 1, the exterior wall thermal insulation decorative panel mainly includes a decorative panel body 1, a fan cover structure 9 is installed in the middle of the side surface of the decorative panel body 1 through fasteners, and ventilation holes 10 are opened on the side surface of the fan cover structure 9.

The fan cover structure 9 covers the outer side of the power generation fan blades 5, and the ventilation holes 10 are tapered holes.

The coverage area of the ventilation holes 10 is larger than the whole area of the power generation fan blades 5. The main function of this design is that when the wind enters the fan cover structure 9 from the ventilation holes 10, it can accurately hit the power generation fan blades 5, which can effectively avoid interference on the inner wall of the fan cover structure 9 due to excessive air intake.

In this embodiment, as shown in Fig. 1, Fig. 3 and Fig. 5, on the basis of Embodiment 1, when the external wall thermal insulation decorative panel at high altitude receives wind, the wind here blows in the direction of the building, i.e., the direction of the fan cover structure 9, and the wind will enter the fan cover structure 9 along the ventilation holes 10 and blow to the power generation fan blades 5, thus driving the power generation fan blades 5 to rotate to realize wind power generation. The tapered holes of the ventilation holes 10 are designed to allow the wind entering into the ventilation holes 10 to be mechanically compressed, so that the impact force on the power generation fan blades 5 can be increased, and wind power generation can be realized even under the condition of low wind power. Another function of designing the wind cover structure 9 is to protect the power generation fan blades 5 and avoid the problem that the power generation fan blades 5 are damaged by the external environment during long-term use.

Embodiment 4

As shown in Fig. 1, the exterior wall thermal insulation decorative panel mainly includes a decorative panel body 1, and a fan cover structure 9 is installed in the middle of the

side of the decorative panel body 1 through fasteners. As shown in Fig. 5, the two sides of the fan cover structure 9 are of open design, and wind collecting covers 12 are installed on the inner wall with openings on both sides of the fan cover structure 9 through fasteners, and one end of the wind collecting covers 12 located in the inner cavity of the fan cover structure 9 is fixedly connected with air ducts 13.

As shown in Fig. 2, an integrated box 2 is installed in the middle of the back of the decorative panel body 1 through fasteners, and a wind turbine generator set 3 is installed in the middle of the inner cavity of the integrated box 2. As shown in Fig. 4, a rotating shaft 4 is installed in the front position of the wind turbine generator set 3, and power generation fan blades 5 are sleeved on the outer ring of the rotating shaft 4, and impact blocks 11 are fixedly welded on the surface of the power generation fan blades 5.

Where, the wind collecting covers 12 have a pyramid structure and the wind collecting covers 12 have a hollow cover structure. The inner cavity of the air ducts 13 is communicated with the inner cavity of the wind collecting covers 12, and the air outlet port of the air duct 13 faces the direction of the power generation fan blades 5. Where, the impact blocks 11 are arc blocks, and the impact blocks 11 have hollow block structure, and the opening direction of the impact blocks 11 faces the air outlet of the air ducts 13.

The impact blocks 11 protrude from the surface of the power generation fan blades 5, so that when the wind blows to the power generation fan blades, the wind can be fully utilized through the blocking of the impact blocks 11. Here, it is mainly aimed at the wind blown in from the side, and with the design of the air ducts 13 facing the power generation fan blades 5, the wind from the air ducts 13 can be directly blown on the impact blocks 11, so as to increase the utilization rate of the wind blown from the side. It should be noted that the wind collecting covers 12 are hollow covers with a pyramid structure, i.e., the opening area at the opening end is large, and the diameter at its end, i.e., the end near the air ducts 13, is small, so that when there is wind or breeze, the wind can be effectively collected and concentrated, i.e., the wind can be compressed through two ends with different sizes, i.e., the impact force of the breeze is increased, and the wind utilization efficiency is improved. The inner cavity of the air ducts 13 is communicated with the inner cavity of the wind collecting covers 12, so that the wind can smoothly flow from the wind collecting covers 12 to the power generating fan blades 5, and the transmission efficiency of the wind is ensured. The air outlet port of the air ducts 13 faces the direction of the power generation fan blades 5, which further

optimizes the effect of wind power. The impact blocks 11 are an arc-shaped blocks with a hollow cavity, and the design helps to concentrate and enhance the impact force of wind power and improve the rotation efficiency of the power generation fan blades 5. The opening direction of the impact blocks 11 faces the air outlet of the air ducts 13, so that the wind force ejected from the air ducts 13 directly acts on the power generation fan blades 5, and the utilization rate of the wind force is maximized. This series of designs not only improves the efficiency of wind energy collection and utilization, but also ensures the stability and efficiency of the power generation process, thus significantly enhancing the comprehensive performance of the external wall thermal insulation decorative panel.

In this embodiment, when the wind direction of the external environment is parallel to the building, i.e., parallel to the thermal insulation decorative panel of the external wall, the wind will enter the fan cover structure 9 from the position of the wind collecting covers 12, enter the air ducts 13 after passing through the wind collecting covers 12, and finally be ejected from the air outlet port of the air ducts 13, and part of the wind force acts on the arc cavity of the impact blocks 11, so that the wind force parallel to the power generating fan blades 5 can also drive the power generating fan blades 5 to rotate. Then, wind power generation is carried out. The function of the pyramid-shaped hollow wind collecting covers 12 is the same as that of the tapered ventilation holes 10, so that the air entering the wind collecting covers 12 can be compressed, thereby increasing the force blown from the side to act on the power generating fan blades 5. An assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy can be widely used in the following building types to provide sustainable power support.

1. Residential quarters and office buildings, it can provide part or even all of the electricity demand for buildings and significantly reduce the electricity cost of residents and enterprises. By reducing dependence on traditional energy sources, energy conservation and emission reduction can be achieved and environmental protection can be promoted.
2. Commercial buildings: In shopping malls, hotels and other places, this system can provide stable power support for a large number of lighting, air conditioning and other equipment.

This not only helps to improve the sustainability of commercial operations, but also improves economic benefits and reduces operating costs.

3. Industrial buildings and public facilities: it is suitable for factories, schools and hospitals, etc., which can provide reliable power for industrial production equipment and ensure the normal operation of production. It provides stable energy supply for various facilities in schools and hospitals, and improves the quality and reliability of public services.

4. Remote areas and areas with unstable power supply: In remote areas or areas with unstable power supply, the external wall decorative panel can be used as an independent energy supply system to solve the local power consumption problem and ensure the basic living and work needs.

Based on the concept of sustainable development and environmental protection in the future, this technical scheme can realize the production and utilization of clean energy, especially in the case of the scarcity of non-renewable resources at present and in the future, and it has a wide application prospect.

The above embodiments are only for describing the preferred embodiments of the invention and are not intended to limit the scope of the invention. Without departing from the scope or spirit of the invention, various modifications and improvements made to the technical schemes of the invention by people of ordinary skill in the art should fall within the protection scope determined by the claims of the invention. The technologies, shapes and structural parts not described in detail in the present invention are all well-known technologies.

CLAIMS

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1. An assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy comprises a decorative panel body (1), wherein an integrated box (2) is installed in the middle of the back of the decorative panel body (1) through fasteners, a generator set (3) is installed in the middle of the inner cavity of the integrated box (2), a rotating shaft (4) is installed at the end position of the generator set (3), and power generation fan blades (5) are installed on the outer ring of the rotating shaft (4).
2. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that one side of the inner cavity of the integrated box (2) is provided with an inverter (6), and the other side of the inner cavity of the integrated box (2) is provided with a storage battery (7).
3. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that the generator set (3) is electrically connected with the inverter (6) through wires, and the inverter (6) is electrically connected with the storage battery (7) through wires.
4. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that one end of the rotating shaft (4) penetrates through the decorative panel body (1) and extends to the other side of the decorative panel body (1), and the decorative panel body (1) is butted and installed with the external wall of the building through the keel skeleton structure.
5. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that photovoltaic panels (8) are installed at the upper and lower ends of the side surface of the decorative panel body (1) through fasteners, and the photovoltaic panels (8) are electrically connected with the inverter (6) through connection points.
6. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that the middle part of the side face of the decorative panel body (1) is provided with a fan cover structure (9), and the front face of the fan cover structure (9) is provided with ventilation holes (10).

7. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 6, characterized in that the ventilation holes (10) are tapered holes, and one end with a small diameter faces towards one side of the power generation fan blades (5), and the coverage area of the ventilation holes (10) is larger than the overall area of the power generation fan blades (5).

8. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 6, characterized in that the two sides of the fan cover structure (9) are of an open design, the fan cover structure (9) is provided with wind collecting covers (12) at the open positions on both sides, and one end of the wind collecting covers (12) located in the inner cavity of the fan cover structure (9) is butted with air ducts (13).

9. The assembled exterior wall decorative panel based on the integrated utilization of light energy and wind energy according to claim 1, characterized in that the surface of the power generation fan blades (5) is fixedly connected with impact blocks (11), and the impact blocks (11) are arc blocks in a hollow state, and the opening end of the impact blocks (11) face towards the air outlet position of the air ducts (13).

PATENTANSPRÜCHE

1. Ein zusammengesetztes dekoratives Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie umfasst einen dekorativen Paneelkörper (1), wobei ein integrierter Kasten (2) in der Mitte der Rückseite des dekorativen Paneelkörpers (1) durch Befestigungsmittel installiert ist, ein Generatorsatz (3) in der Mitte des inneren Hohlraums des integrierten Kastens (2) installiert ist, eine Drehwelle (4) an der Endposition des Generatorsatzes (3) installiert ist und Lüfterblätter für Energieerzeugung (5) auf dem äußeren Ring der Drehwelle (4) installiert sind.
2. Das zusammengesetzte dekorative Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass eine Seite des inneren Hohlraums des integrierten Kastens (2) mit einem Wechselrichter (6) versehen ist und die andere Seite des inneren Hohlraums des integrierten Kastens (2) mit einer Speicherbatterie (7) versehen ist.
3. Das zusammengesetzte dekorative Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass der Generatorsatz (3) mit der Wechselrichter (6) über ein Kabel elektrisch verbunden ist und der Wechselrichter (6) mit der Speicherbatterie (7) über ein Kabel elektrisch verbunden ist.
4. Das zusammengesetzte dekorative Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass ein Ende der Drehwelle (4) den dekorativen Paneelkörper (1) durchdringt und sich bis zur anderen Seite des dekorativen Paneelkörpers (1) erstreckt, und dass der dekorative Paneelkörper (1) durch die Kielskelettstruktur mit der Außenwand des Gebäudes verbunden und montiert ist.

5. Das zusammengesetztes dekoratives Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass Photovoltaische Paneele (8) an den oberen und unteren Enden der Seitenfläche des dekorativen Paneelkörpers (1) mit Befestigungsmittel installiert sind und die Photovoltaik-Paneele (8) durch Anschlusspunkte mit dem Wechselrichter (6) elektrisch verbunden sind.

6. Das zusammengesetztes dekoratives Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass der mittlere Teil der Seitenfläche des dekorativen Paneelkörpers (1) mit einer Lüfterabdeckungsstruktur (9) versehen ist und die Vorderseite der Lüfterabdeckungsstruktur (9) mit Lüftungslöchern (10) versehen ist.

7. Das zusammengesetztes dekoratives Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 6, dadurch gekennzeichnet, dass die Lüftungslöcher (10) konische Löcher sind und ein Ende mit einem kleinen Durchmesser einer Seite der Lüfterblätter für Energieerzeugung (5) zugewandt ist, und die Abdeckungsfläche der Lüftungslöcher (10) größer ist als die Gesamtfläche der Lüfterblätter für Energieerzeugung (5).

8. Das zusammengesetztes dekoratives Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 6, dadurch gekennzeichnet, dass die beiden Seiten der Lüfterabdeckungsstruktur (9) offen gestaltet sind, die Lüfterabdeckungsstruktur (9) an der offenen Position auf beiden Seiten mit Windsammelhauben (12) versehen ist und ein Ende der Windsammelhauben (12), das sich im inneren Hohlraum der Lüfterabdeckungsstruktur (9) befindet, mit Luftkanäle (13) verbunden ist.

9. Das zusammengesetzte dekorative Außenpaneel auf der Grundlage der integrierten Nutzung von Licht- und Windenergie nach Anspruch 1, dadurch gekennzeichnet, dass die Oberfläche der Lüfterblätter für Energieerzeugung (5) fest mit Aufprallblöcken (11) verbunden ist, und die Aufprallblöcke (11) Bogenblöcke in einem hohlen Zustand sind, und das offene Ende der Aufprallblöcke (11) in Richtung der Position des Luftauslasses der Luftkanäle (13) weist.

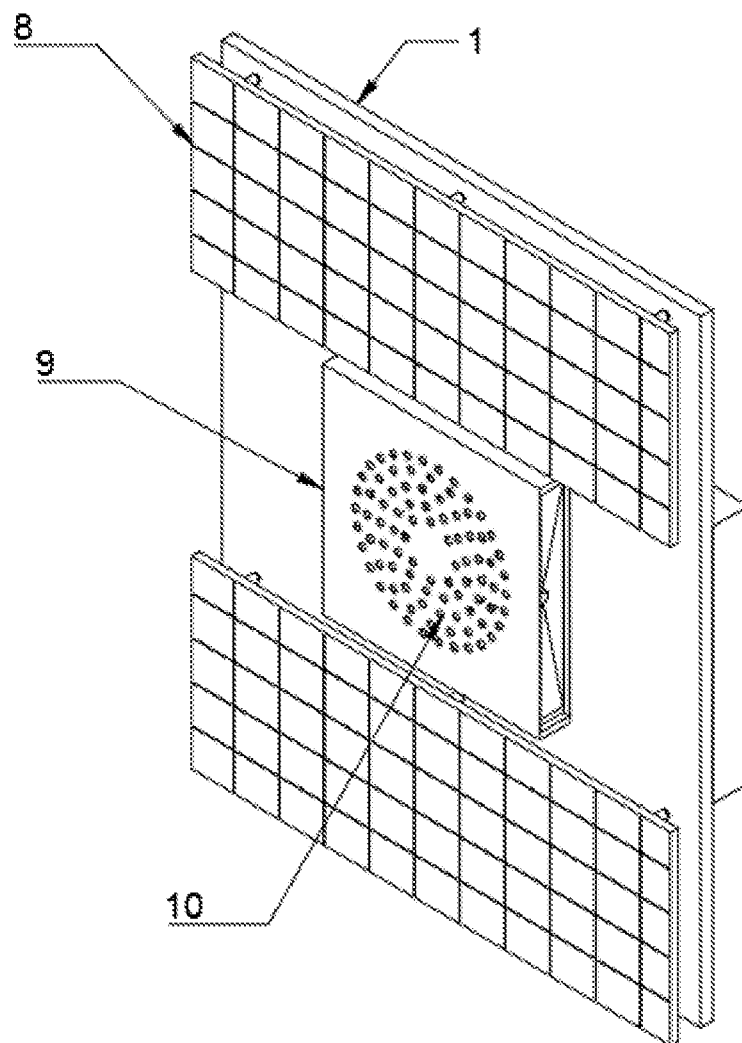


Fig. 1

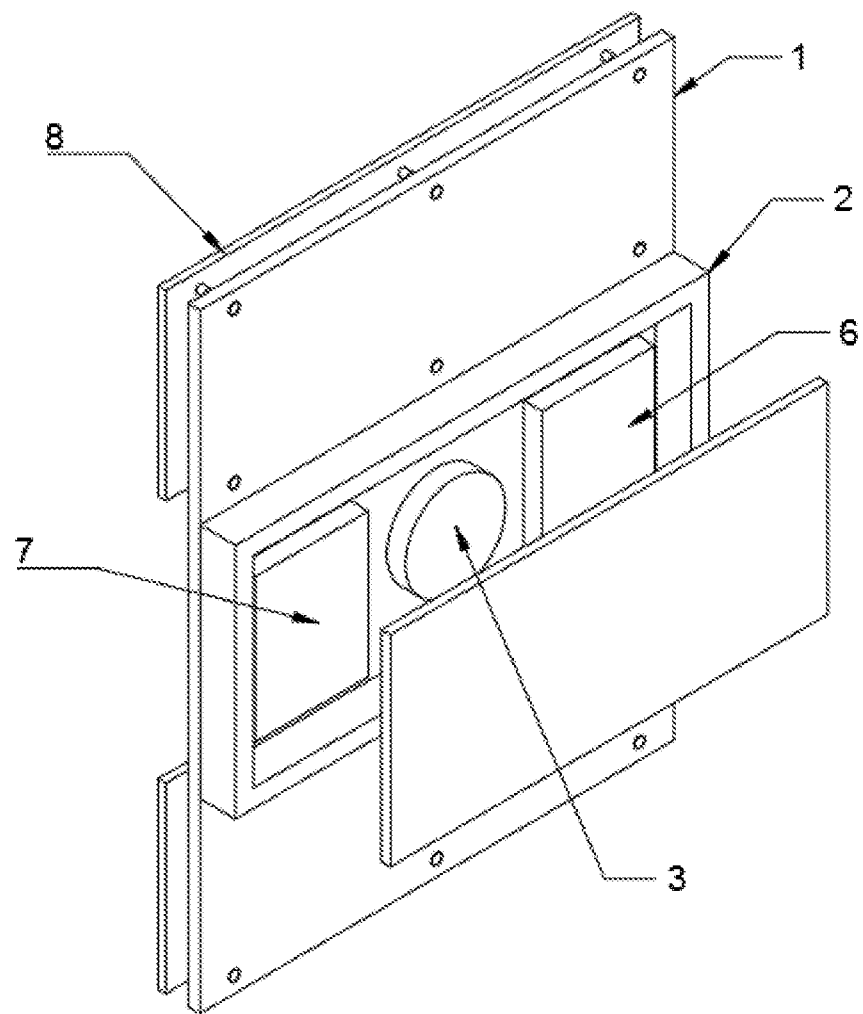


Fig. 2

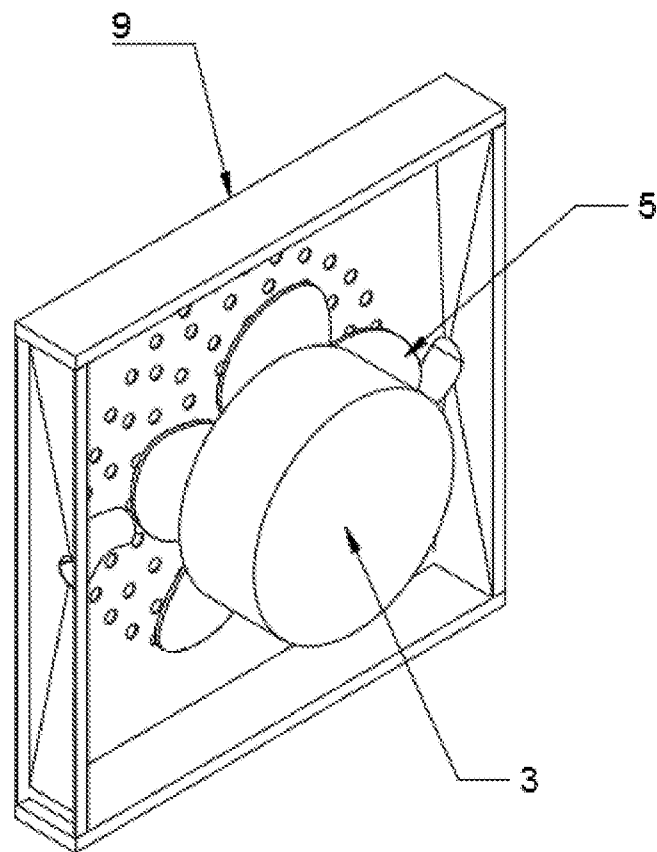


Fig. 3

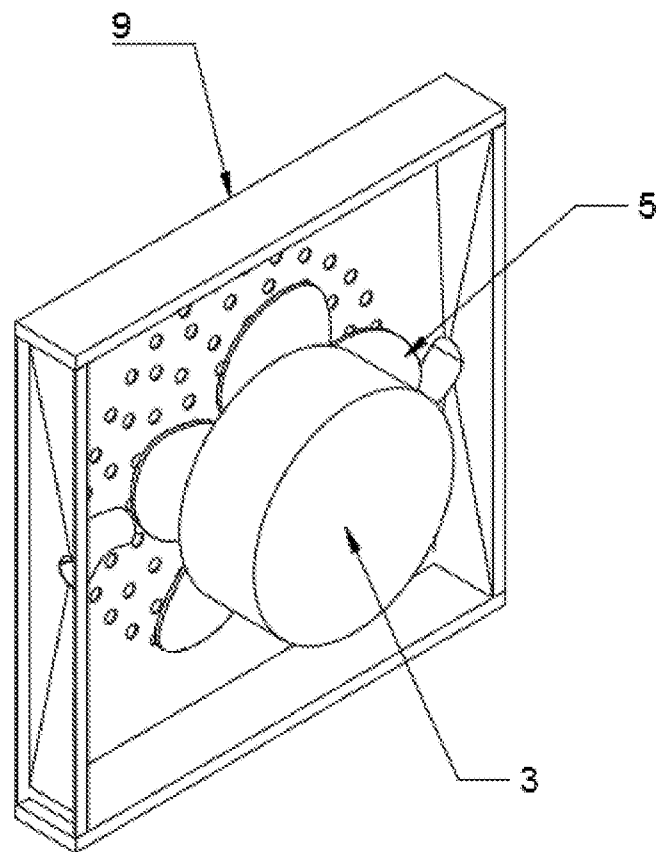


Fig. 4

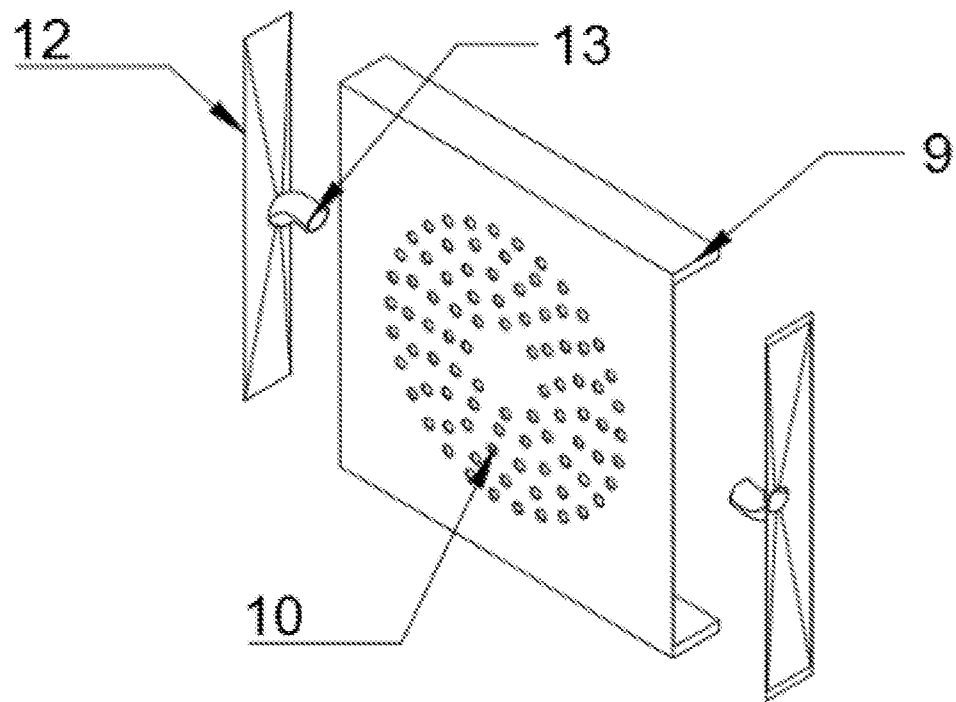


Fig. 5