(No Model.)

W. H. JOHNSEN.

ROTARY FAN.

No. 595,571. Patented Dec. 14, 1897.

FIG. 1.

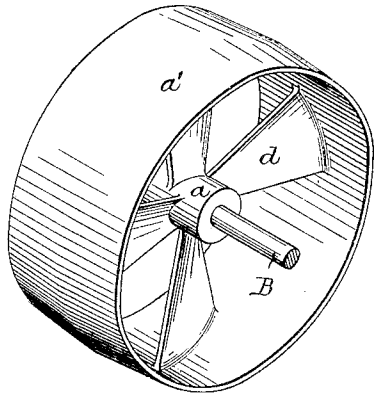


FIG. 3.

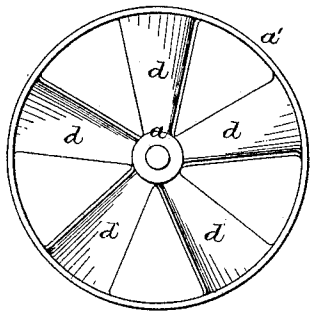


FIG. 2.

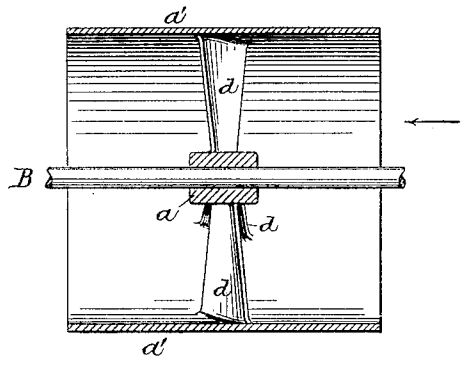


FIG. 4.

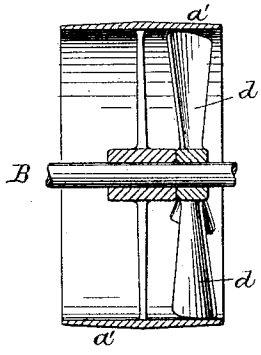


FIG. 5.

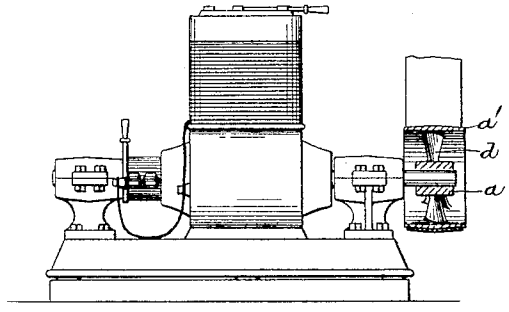
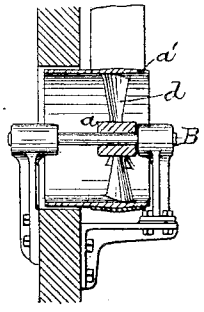


FIG. 6.



Witnesses:

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William H. Johnsen
by his Attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSEN, OF PHILADELPHIA, PENNSYLVANIA.

ROTARY FAN.

SPECIFICATION forming part of Letters Patent No. 595,571, dated December 14, 1897.

Application filed June 26, 1893. Serial No. 478,808. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. JOHNSEN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Rotary Fans, of which the following is a specification.

The object of my invention is to dispense with the fixed casing of a fan and also to utilize a pulley as a fan, an object which I attain by making the fan-casing rotate with the fan.

In the accompanying drawings, Figure 1 is a perspective view illustrating my invention as applied to a pulley. Fig. 2 is a sectional view showing the casing and fan combined. Fig. 3 is an end view looking in the direction of the arrow, Fig. 2. Fig. 4 is a view of an ordinary pulley, showing the fan in place. Fig. 5 is a view showing the application of my invention to a dynamo, and Fig. 6 is a view showing the application of my invention to a ventilator.

Prior to my invention it has been the custom to make the casing of a rotary fan a fixed structure, within which the fan rotates; but in many cases it is impossible to fix the casing in position. Consequently the fan has not been available. My invention overcomes this objection.

As shown in Fig. 1, the hub *a* of a pulley is mounted upon a shaft B in the ordinary manner, and the spokes *d* are arranged in the form of fan-blades, being inclined, as shown. The spokes, as shown in Fig. 1, may be cast with the rim *a'* of the pulley or may be bolted to the rim and hub, according to the construction of the pulley.

In Figs. 2 and 3 I have shown an extended rim *a'*, which acts as a long flue for the passage of air, and in this instance I have shown five fan-blades instead of four, as shown in Fig. 1.

In Fig. 4 I have shown an ordinary pulley with a fan structure mounted upon the shaft within the pulley.

In Fig. 5 I have shown my invention as applied to a dynamo or motor, in which a draft of air is required to be passed through the armature, so as to keep the same cool and at the same time blow away particles of dust or particles of metal that become detached from the commutator and which would otherwise gain access to the machine. It will be understood that the fan is mounted in the end opposite to the commutator, so that a draft of air through the dynamo will tend to keep the parts perfectly clean and at the same time cool.

In Fig. 6 I have shown my invention as applied to an air-shaft or ventilating-opening, the pulley having an extension which enters an opening in the wall, so that no fitting is required. All that is necessary is to aline the shaft with the opening and mount the brackets in proper position and then mount the fan-pulley upon the shaft.

I claim as my invention—

In a combined pulley and fan, the combination of the hub, the rim adapted to receive a belt, spokes connecting the rim to the hub, said spokes being inclined in one direction so that on the rotation of the pulley a current of air will pass therethrough the rim acting as a flue, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. JOHNSEN.

Witnesses:
EDWIN C. FREEMAN,
WILLIAM A. BARR.