H. O. Cook,

Wind Wheel.

No. 49,485. Patented Aug. 15, 1865.

Fig: 1.

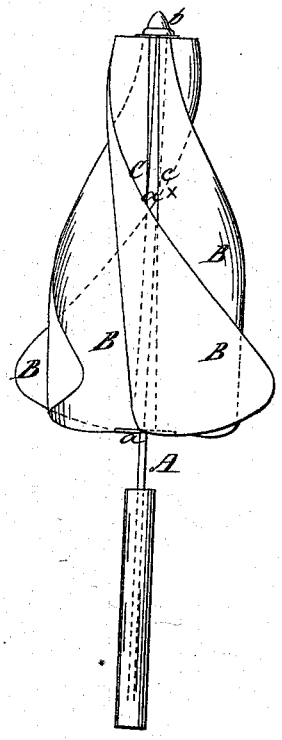
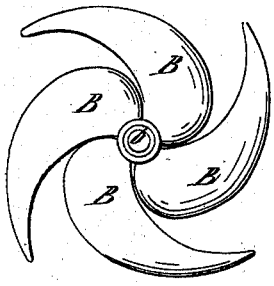


Fig: 2



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UNITED STATES PATENT OFFICE.

HENRY OCEANUS COOK, OF LONDON, ENGLAND.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. **49,485**, dated August 15, 1865.

To all whom it may concern:

Be it known that I, HENRY OCEANUS COOK, of London, in the United Kingdom of Great Britain and Ireland, now temporarily residing in Portland, in the county of Cumberland and State of Maine, have invented a new and Improved Wind-Wheel; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of my invention; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention relates to a new and improved wind-wheel, applicable for all purposes in which it is designed to obtain power from the wind for driving machinery.

The object of the invention is to obtain a wind-wheel which will not require the aid of a vane or other device, or any particular adjustment or arrangement of parts in order that it may face or be kept in a certain position relatively with the wind, so as to be capable of being operated by the same, and still be simple in construction and admit of being manufactured at a small expense.

A represents a shaft, which in this instance is shown in a vertical position, and has a circular head or disk, *a*, secured to it, to which the lower end of the wings or sails B are secured, the opposite ends of the latter being secured to a head, *b*.

The wings or sails B may be constructed of metal, cast, wrought, or rolled, and they may be described as being formed of plates of taper form, one edge, *c*, being straight or parallel with the axis of the wheel, and the other inclined, so that they will gradually increase in width from one end to the other, the upper ends in this instance being the narrow ends. These plates are curved, forming a portion of a circle or scroll in their transverse section, their concave sides being the face sides, or the sides against which the wind acts, and the inner edges of the wings or sails are not in contact, a space, $a^{\times}$, being allowed between them for the wind to pass through and fill or act against the wing or sail directly behind the one which receives the direct action of the wind. By this arrangement it will be seen that the wind only acts efficiently against the concave sides or surfaces of the buckets, which are at one side of the axis of the wheel, the convex surfaces being at the opposite side, and hence the rotation of the wheel; and it will further be seen that the wheel will always operate regardless of the changes in the direction of the wind, and without the aid of any vane or other means to effect that end, the position of the wheel always being the same.

The opening or space at the inner edges of the wings or sails, in order to admit of the wind passing through and filling the sail at the rear of the one having its direct action, is a very important feature of the invention, as it greatly augments the power and efficiency of the wheel.

The taper form of the wings or sail is important, as it causes the wind, in the rotation of the wheel, to act upon or against them from their narrow to their broader ends, the concave surfaces being gradually exposed to the action of the wind.

I do not confine myself to any particular material in the construction of the wheel. Wood or metal (cast or wrought) may be used, or they may be constructed of a textile or other fibrous or flexible material stretched over or placed on frames. So long as the curvature of the wings or sails and the opening or space between their inner edges are obtained material is not important. Neither is position, for the wheel may be run either vertically, inclined, or horizontally.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A wind-wheel composed of wings or sails B, curved so as to form a portion of a circle or a section of a scroll in their horizontal section, and of taper form longitudinally, as described.

2. A space or opening between the edges of the wings or sails, when the latter are of the shape or form specified, for the purpose set forth.

HENRY O. COOK.

Witnesses:

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