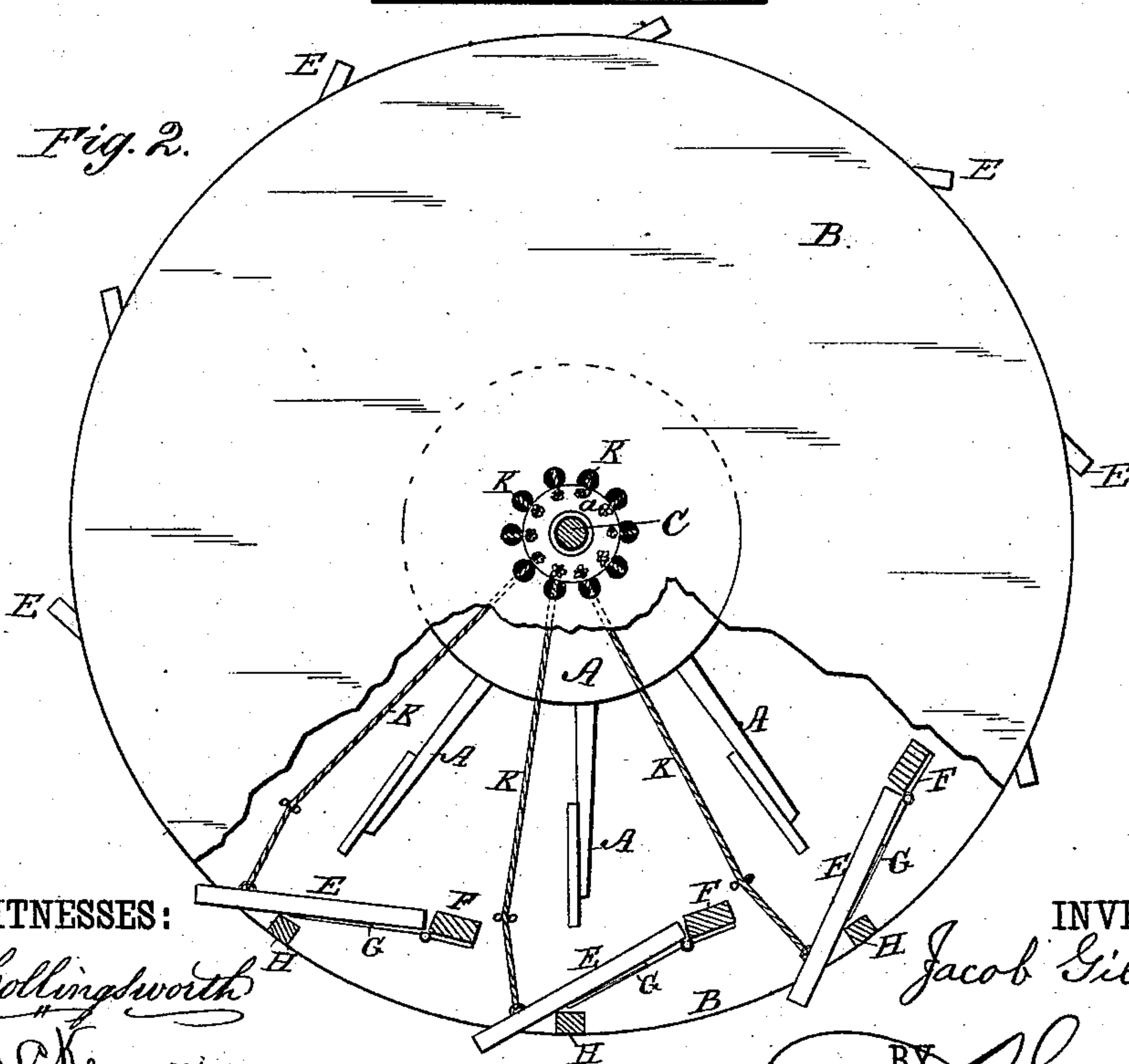
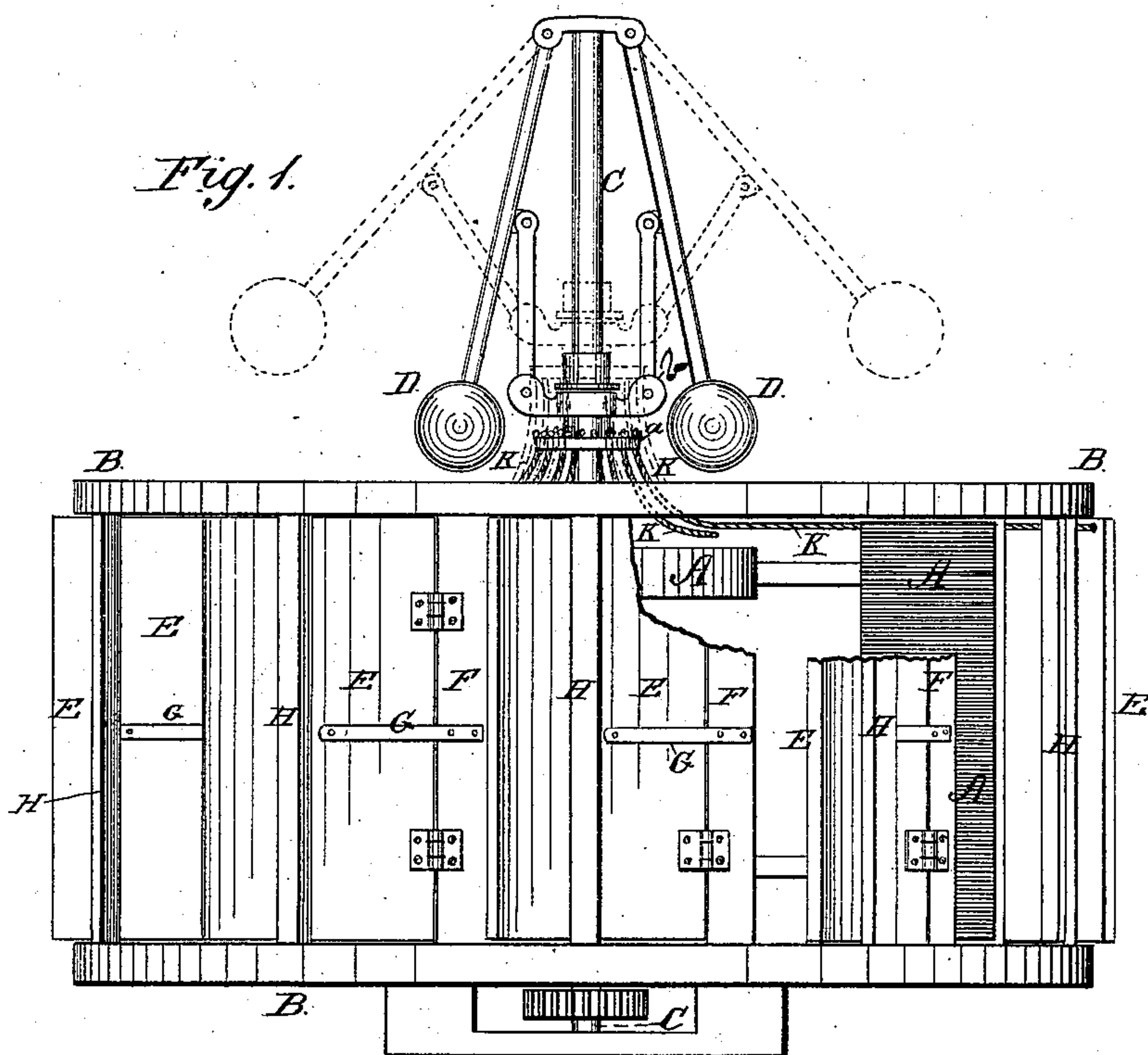


(No Model.)

J. GILSTRAP.  
Wind Wheel.

No. 236,018.

Patented Dec. 28, 1880.



WITNESSES:

*W. W. Hollingsworth*  
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# UNITED STATES PATENT OFFICE.

JACOB GILSTRAP, OF LA PLATA, MISSOURI.

## WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 236,018, dated December 28, 1880.

Application filed July 22, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB GILSTRAP, of La Plata, in the county of Macon and State of Missouri, have invented a new and Improved Wind-Wheel; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of horizontal wind-wheels to which the access of wind is controlled by means of hinged valves whose position is regulated by the action of a governor. Such valves have been connected with the governor by means of two cords and rings, the latter being arranged to slide simultaneously in opposite directions on the shaft or axis of the wheel, so that as one cord slackens the other is taken up, and the valves thereby held fixed in position, open or closed, according to the velocity of revolution of the governor-balls.

In my invention I employ but one cord or rope for each valve, which controls its movement in one direction—to wit, inward—while a spring serves to operate or swing it in the other direction, or outward. I thereby lessen the number of parts and greatly reduce friction, so that the wheel operates more effectively and steadily.

My invention further consists in providing guards or stops to limit the outward movement of the hinged valves, as hereinafter described.

In the accompanying drawings, forming part of this specification, Figures 1 and 2 are respectively a side and plan view of my improved wheel, part being broken out to show the interior construction.

A indicates the wheel proper, and B the concentric stationary casing which incloses it. The wheel is mounted on a vertical axis, C, that extends above the casing B, and has a ball-governor, D, attached, as shown in Fig. 1.

The side of the casing B is formed of a series of valves or doors, E, which are hinged to vertical posts F, and open outward. A spring, G, is applied to each door E, for the purpose of causing it to tend to remain open. Guard-posts H are suitably arranged to prevent the valves E opening too far. The valves are all connected by cords K with a disk, a, which forms an attachment of the sliding yoke b of the governor D.

The cords K may be arranged in various ways; but I prefer to have them pass through holes in the top of casing B concentric with the axis C, and to extend thence radially to the valves E.

From this construction and arrangement of parts it is obvious that the speed of the wheel A will be automatically regulated, since the force of the wind acting on it will be graduated by the valves E, whose position controls the access of the wind to the wheel. If the force of the wind is slight, the wheel A will revolve slowly and the governor-balls D will hang nearly vertical, the valves E then standing wide open. If the force of the wind increases beyond a certain degree, the rapidity of revolution of the wheel will cause the governor-balls to be thrown out by centrifugal action, thus raising the yoke b and its attached disk a, and thereby exerting corresponding traction on the cords K, so that the valves E will be drawn inward—that is to say, closed more or less—and the speed of the wheel correspondingly reduced. This result depends upon the fact that the position of the valves determines the size of the lateral openings of case B, through which the wind has access to the wheel A, and the force with which the wind can act on the latter is obviously dependent on the size of such openings, or, in other words, on its freedom of access to the wheel. The governor changes the position of the valves according as the wind varies in force, and thus the speed of the wheel is regulated.

What I claim is—

1. In a horizontal wind-wheel, the combination, with the hinged valves and springs attached thereto and tending to open them, as specified, of the cords and the sliding yoke connected with the governor-arms, said cords passing through the top of the wheel-casing at points contiguous to the axis, all as shown and described, to operate as specified.

2. The combination of the guard-posts and springs with the hinged valves, the cords K, disk a, yoke b, governor-balls D, and wheel A, as shown and described.

JACOB GILSTRAP.

Witnesses:

JOS. PARK,  
B. SWARTHOUT.