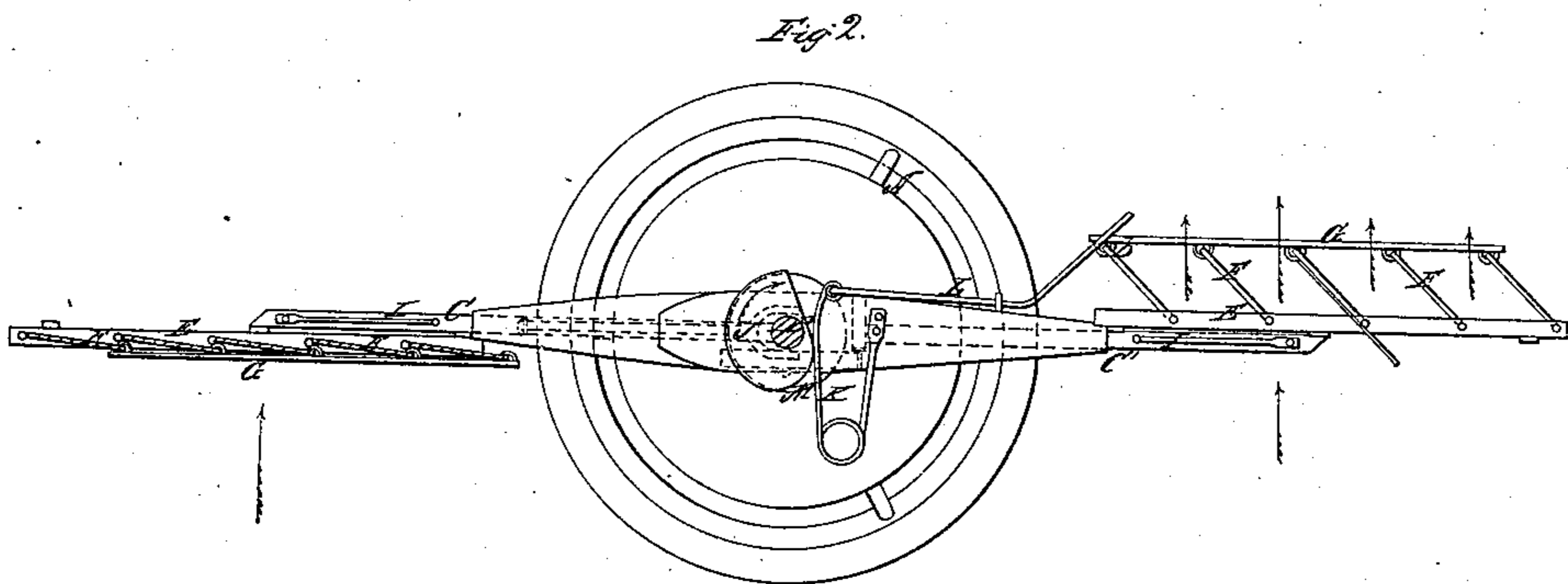
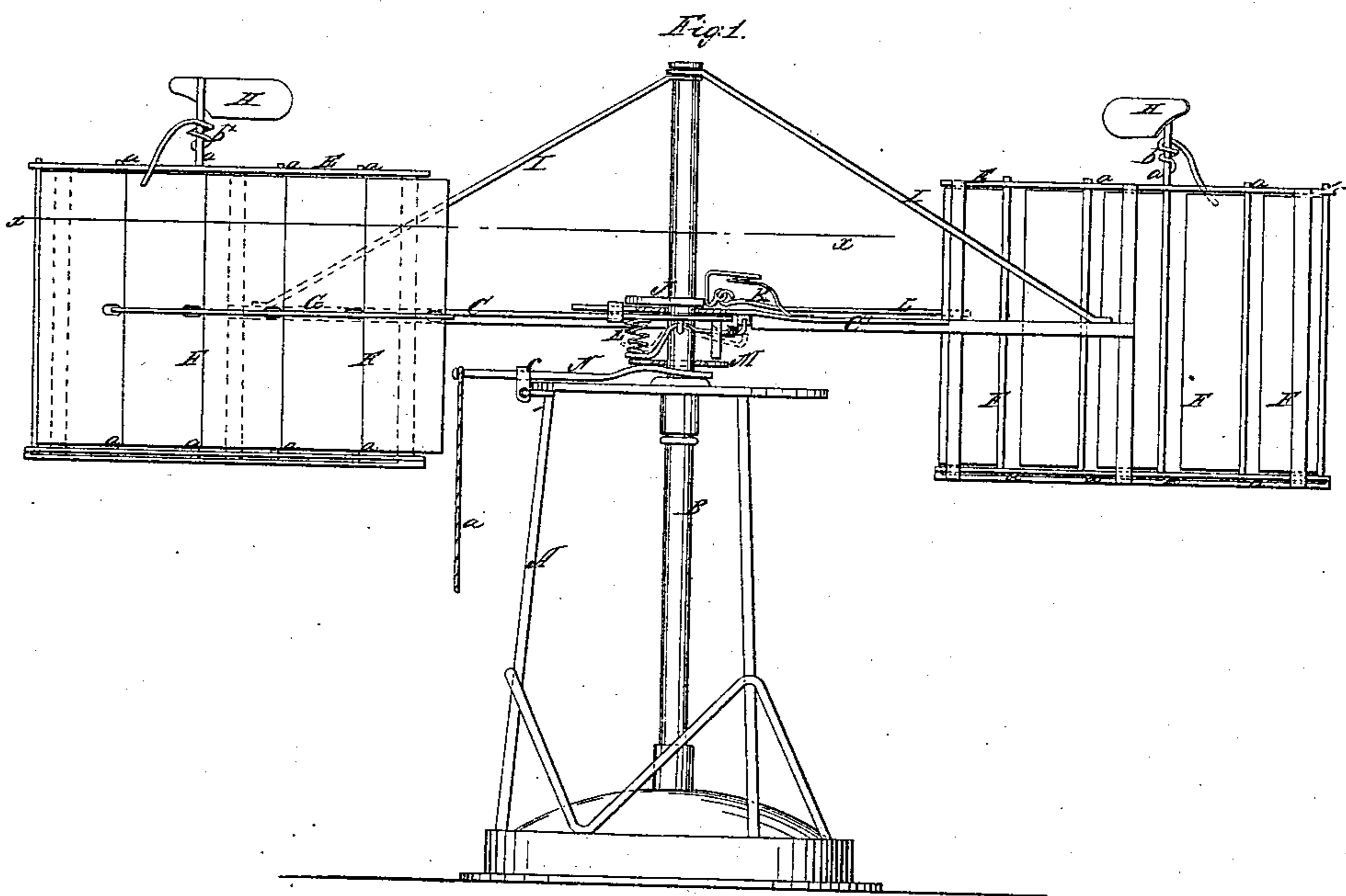


W. A. Santee,

Wind Wheel,

N^o 44,018.

Patented Aug. 30, 1864.



Witnesses:

Geo. H. Rice
Theo. Fitch

Inventor:

W. A. Santee
per Wm. H. Co
Atty

UNITED STATES PATENT OFFICE.

W. N. SANTEE, OF DIXON, ILLINOIS.

IMPROVEMENT IN WIND-WHEELS.

Specification forming part of Letters Patent No. 44,018, dated August 30, 1864.

To all whom it may concern:

Be it known that I, W. N. SANTEE, of Dixon, in the county of Lee and State of Illinois, 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, making a part of this specification, in which—

Figure 1 is an elevation of my invention; Fig. 2, horizontal section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

This invention consists in constructing the sails of the wind-wheel of a series of vertical shutters, connected by a rod and provided with governors, all being arranged in such a manner that the shutters will be opened and closed under the action of the wind, in order to insure the rotation of the wheel.

The invention also consists in using, in connection with the shutters aforesaid, springs, and a catch or fastening with one or more loose sail-arms, all arranged, as hereinafter set forth, to admit of the wind-wheel being suddenly stopped, when desired.

A represents a framing in which a vertical shaft, B, is fitted, and has two horizontal arms, C C', upon it—one of which, C, is permanently attached to the shaft B, and the other one, C', fitted loosely upon it, and secured to the shaft in line with C by means of a catch or fastening, D, acted upon by a spring, E, as shown in Fig. 1. Each of the arms C C' has an upright rectangular frame, E, secured to it, and in these frames E there are fitted vertical shutters F, which have pivots or journals *a* at their upper and lower ends, said pivots or journals being either at one end of the shutters or at one side of the centers of the edges thereof, and allowed to turn freely in bearings at the upper and lower parts of the frames. The shutters F of each frame E are connected by a rod, G, so as to insure an equal and simultaneous movement of all the shutters in each frame, and the central shutter of each frame E has its upper journal extending upward above the frame, and provided with a vane or governor, H. These vanes, as they are acted upon

by the wind, cause the shutters to open and close, the wind having a leverage power on the vanes in consequence of the latter projecting at one side of the journals of the shutter, as shown in Fig. 1.

I are stays which extend from the upper end of the shaft B to the arms C C', and serve to support the latter.

J is an eccentric, which is secured to the shaft B, above the loose arm C', and K is a U-shaped spring attached to the upper surface of the arm C', and having a rod, L, at its outer end, said rod extending through an eye, *b*, at the inner end of the rod G of the shutters of the loose arm C', and having its outer part bent in an oblique position to its main part, as shown in Fig. 2. On the shaft B, below the catch or fastening D, there is fitted a loose ring, M, underneath which there is a lever, N, having its fulcrum at *c* on the framing A.

The operation is as follows: Suppose, for instance, that the wind is blowing in the direction indicated by the arrows in Fig. 2. It will be seen, by referring to said figure, that the wind, in acting against the vane H and shutters F at one side of the framing, will close said shutters against the frame E, and propel the wheel while the shutters of the opposite arm will be forced open by the action of the wind, and have only their edges presented to it. Thus the shutters are made to open and close and the wheel rotated under the action of the wind.

In order at any time to stop the wheel the attendant or operator, by means of a rod, *a*^x, actuates the lever N, and raises the ring M, which is made to press against the fastening D and move the same so as to liberate the arm C' from the shaft B. This, of course, will cause the wheel to stop, as both arms will be kept at the windward side of the wheel, and in order to insure such operation the eccentric J, as the loose arm C' moves it, actuates the spring K, the rod L of which closes the shutters and keeps them in a closed state.

In order to start the wheel the loose arm C' is turned around in line with the arm C, when the catch or fastening D will engage with it, and the wheel will rotate as before.

I would remark that the journals on which

the vanes H are placed may have springs b^x connected with them, and so arranged as to have a tendency to keep the shutters in a closed state.

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

1. The shutters F, pivoted vertically in frames E, and connected by a rod, G, in connection with two vanes or governors H, all arranged to operate in the manner, substantially as and for the purpose set forth.

2. The loose arm C', one or more in connection with a catch or fastening, D, substantially as and for the purpose specified.

3. The eccentric J on the shaft B, in connection with the U-spring K and rod L, for closing the shutters of the loose arm C' when the latter is detached from the shaft B, as described.

W. N. SANTEE.

Witnesses:

ABRAM BROWN,
McCOY ROBY.