

C. P. LONG & C. N. McEVERS.

Wind-Mills.

No. 137,012.

Patented March 18, 1873.

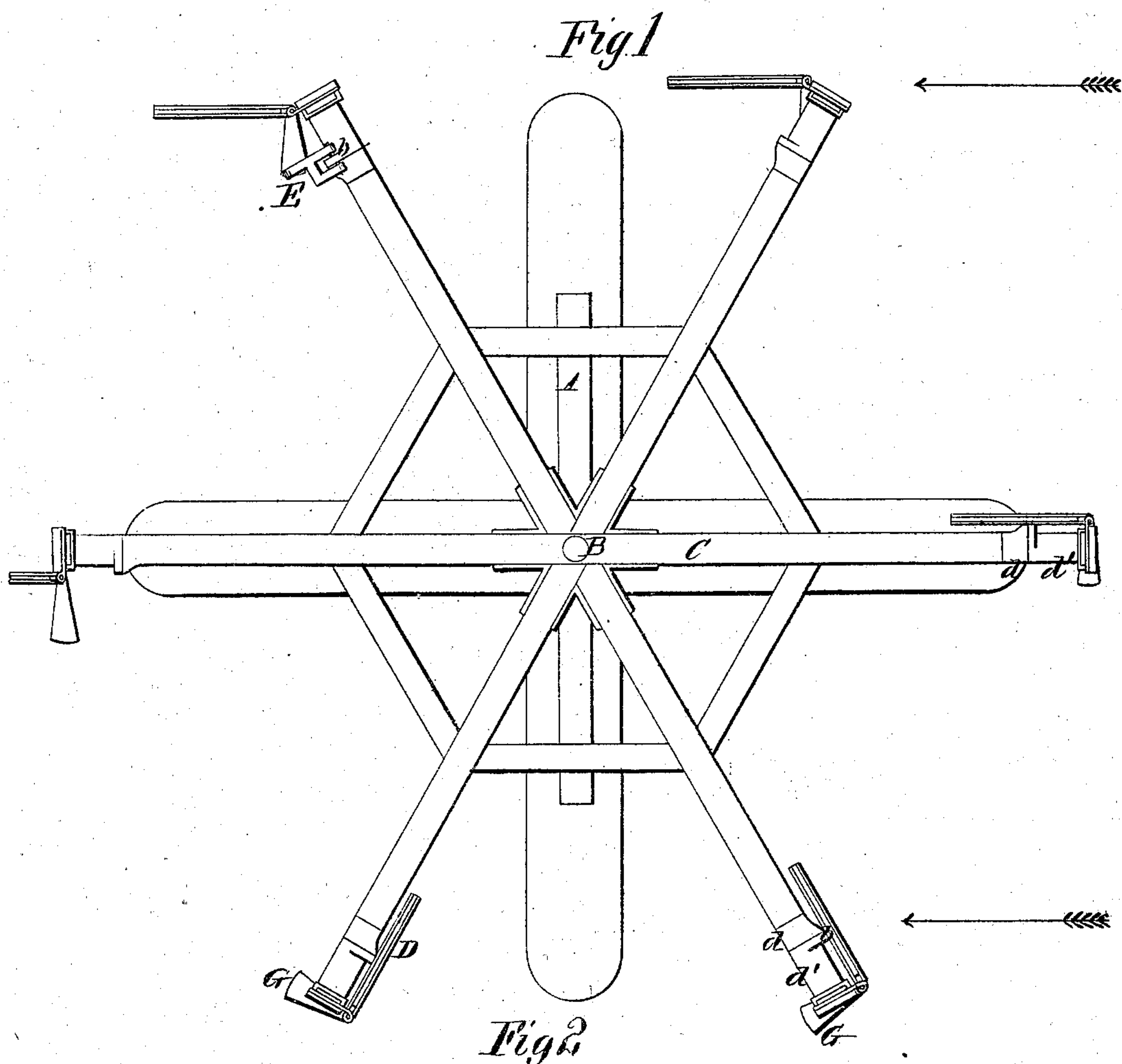
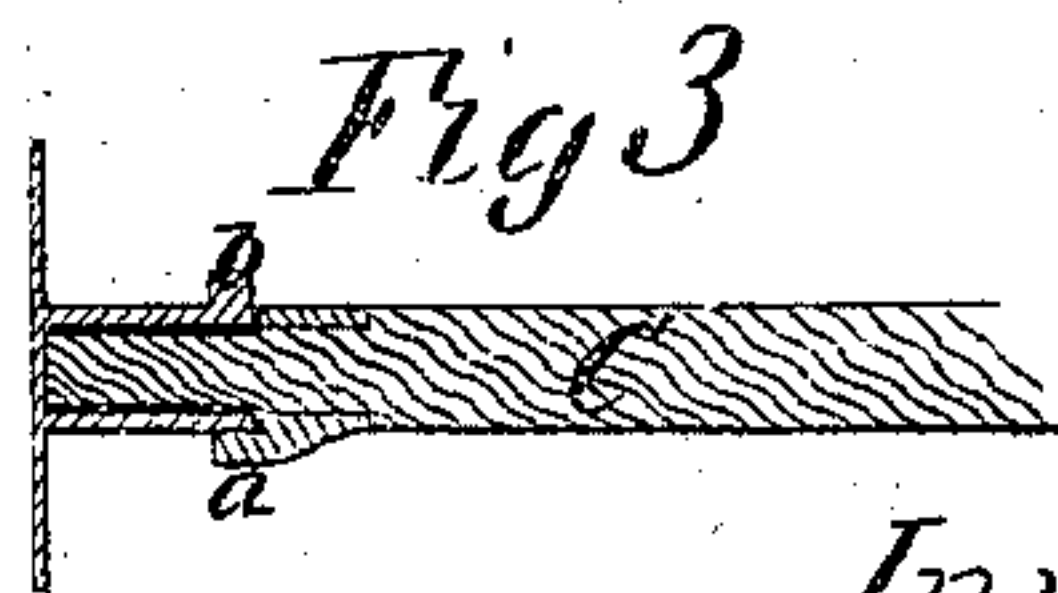
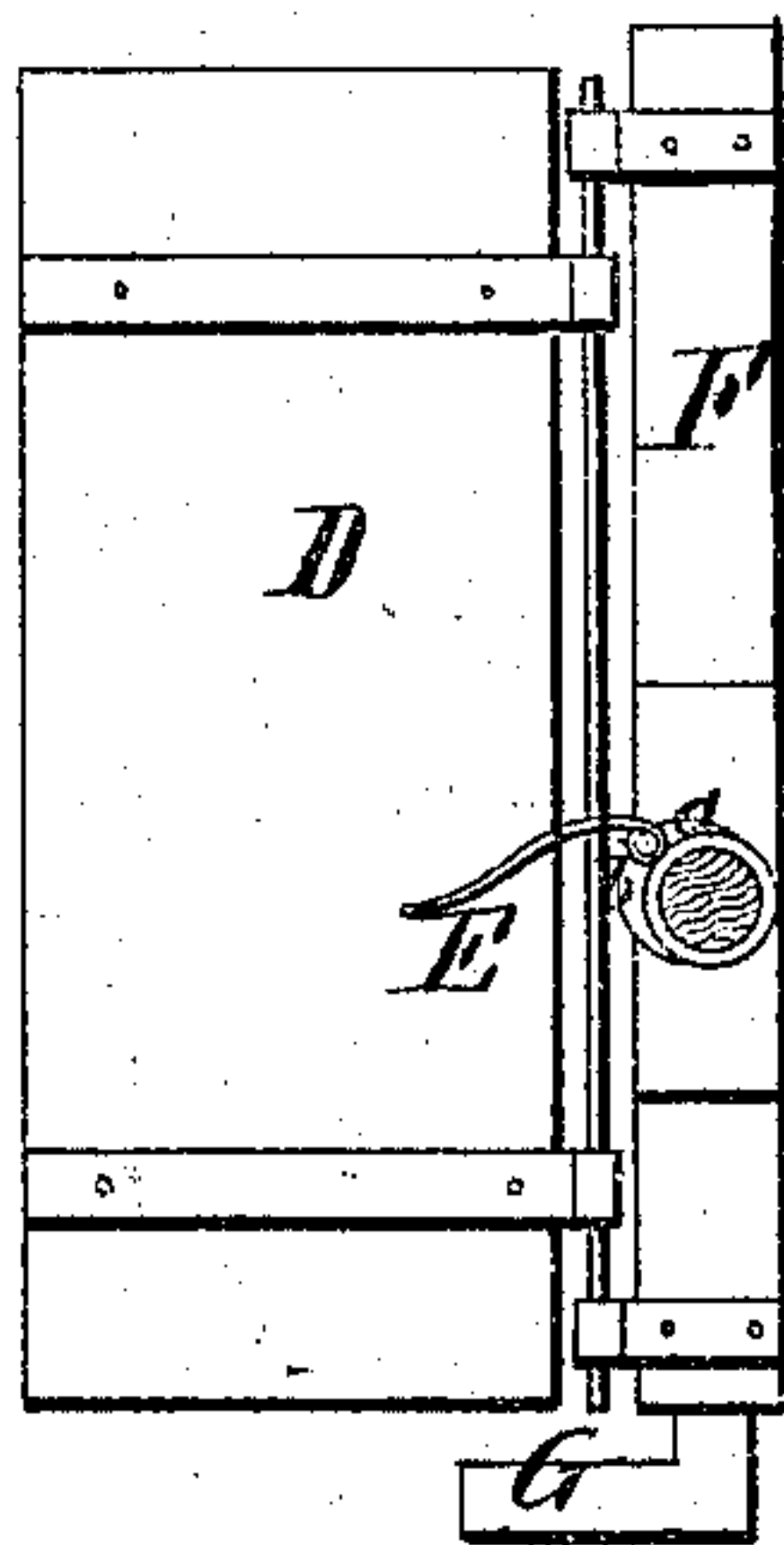


Fig 2



Witnesses
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UNITED STATES PATENT OFFICE.

CORNELIUS P. LONG AND CHARLES N. McEVERS, OF MURRAYVILLE,
ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 137,012, dated March 18, 1873.

To all whom it may concern:

Be it known that we, CORNELIUS PRUETT LONG and CHARLES NELSON McEVERS, of Murrayville, in the county of Morgan and State of Illinois, have invented a new and valuable Improvement in Wind - Wheels; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is a plan view of our invention. Fig. 2 is a detail view of the same.

Our invention has relation to horizontally-rotating wind - wheels; and it consists in the construction and novel arrangement of the horizontal spindles and the ballasted sails journaled thereto, and of the governing devices, all as hereinafter described. The object of this invention is to produce a wind-wheel of great power, which will automatically yield to the force of high winds and gusts in such a manner as to preserve a nearly-uniform speed, and avoid the destruction of its parts.

In this invention a series of sails are pivoted, by sockets attached to the sail-bars, to the spindle-ends of the spokes of a horizontal wheel. The sail-bar is ballasted by a weight at its lower end, and is pivoted below the middle point of the sail.

Referring to the drawing, A designates the wind-wheel frame, B the vertical shaft, and C the radial arms or spokes. D designates the sails, each of which is hung in an upright position upon an iron or wooden spindle. The distance from the spindle to the center of the fan depends upon the amount of power desired. The spindles being distant from the center of the sails or wings, unusual spurts or dashes of wind compel the latter to lie down or adjust themselves, and to thus govern the motion of the wheel. The spindle is in two parts, *d d'*, the former secured rigidly to the radial arm; and the other swiveled or loosely attached, so that it may turn. Both parts

are provided with corresponding stops *a* to prevent the ballasted sails from swinging back beyond a vertical position after being bowed forward in cases of high winds.

Other similar stops may be provided to prevent the sails from moving beyond a horizontal position in case of storm.

E designates a bent ratchet or stop, hinged to the stop *b*, and designed to hold the sail in a horizontal position in time of storm. This ratchet or check has an offset at its free end which, when the sail attains a horizontal position, comes in contact with the face of the stop *a*, and in this way prevents the sail from being moved past such position. Each sail is attached to a bar, F, on the end of its spindle, by means of hinges, so that when the wheel is properly acting the sails will be brought facing the propelling wind on one side, and with their edges toward it on the other side of the wheel. To the lower ends of the bars F are secured the ballasts G. The action of each sail is a series of semicircular reacting self-adjusting movements. About one-third of the sails are utilized by the wind, and drive the wheel; while, by the semicircular movement or half revolution, the other sails are turned edgewise to the wind on one side, and come back to position on the other.

In operation, the sails, under ordinary wind, remain upright, turning edgewise when coming up in the wind, and flatwise when facing the wind. Under a high wind or gust the power of the ballasting weight is overcome, and the sail is bowed to a horizontal or angular position.

Some of the advantages of this wheel are as follows: It is simple, durable, and powerful. It will work in a current of water with equal or greater results than in wind; and its operation will not be obstructed by sleet.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a horizontally-rotating wind-wheel the sails D, hinged to the bars or heads F, holding the ballasts G, and journaled to the

spindles or arms of the wheel at points below the middle of said bars or heads, substantially as specified.

2. In combination with the hinged sails D and spindles *d d'*, the ratchet or check E and stops *a b*, substantially as specified.

In testimony that we claim the above we have

hereunto subscribed our names in the presence of two witnesses.

CORNELIUS P. LONG.
CHAS. N. McEVERS.

Witnesses:

J. H. METCALF,
J. C. SMITH.