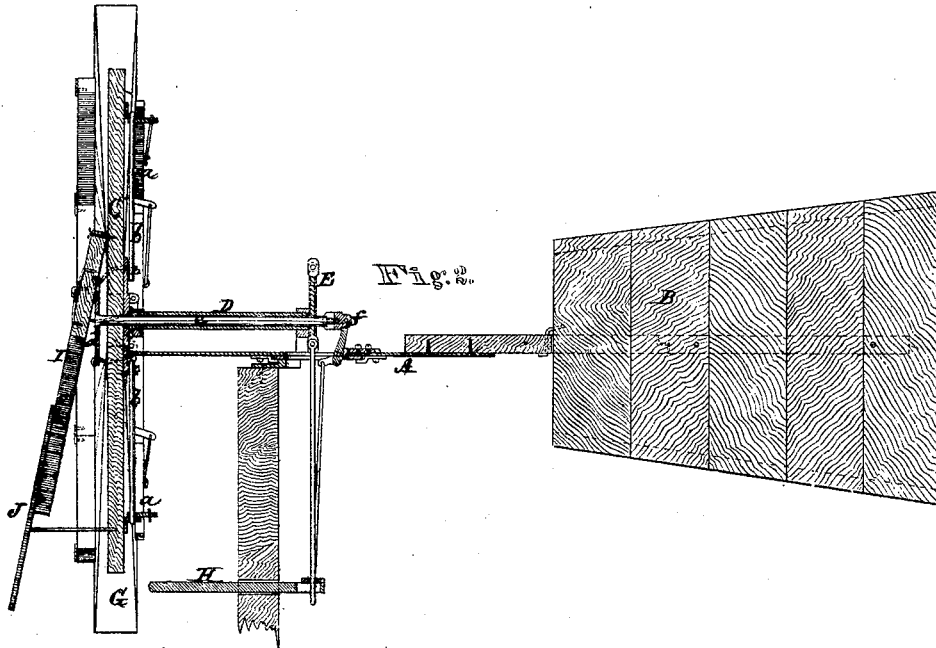
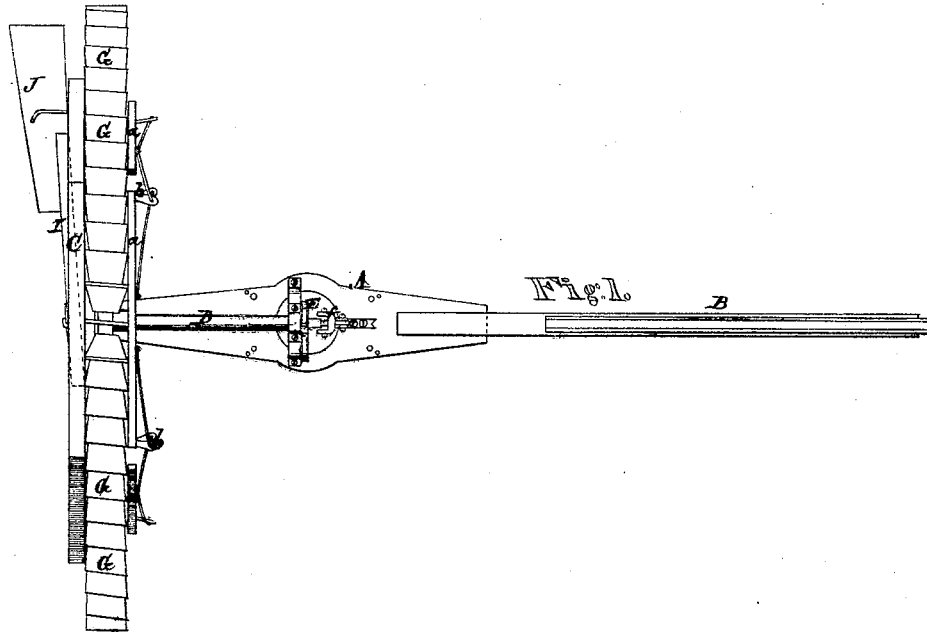


L. E. HAZEN.

Improvement in Wind-Mills.

No. 114,677.

Patented May 9, 1871.



Witnesses:
Chas. Kemper
Villette Anderson

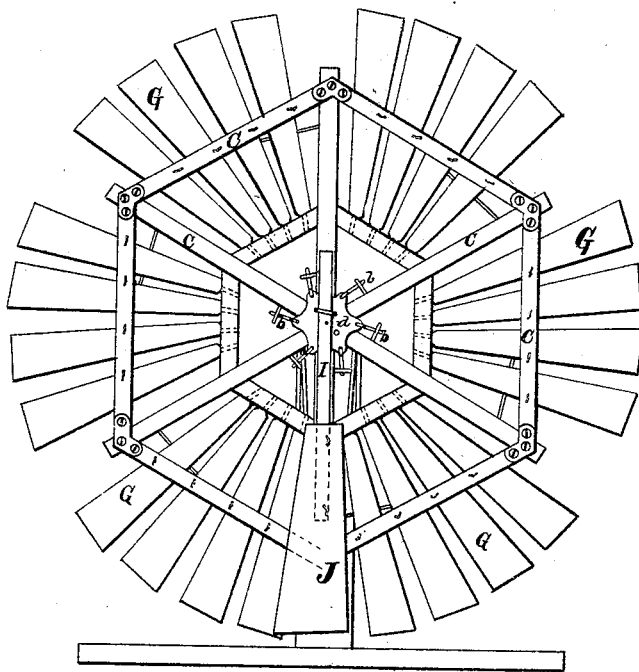
Inventor.
L. E. Hazen
Chapman & Co.
Attys

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2 Sheets--Sheet 2.

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Fig. 3.



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United States Patent Office.

LOREN EDWIN HAZEN, OF FOND DU LAC, WISCONSIN.

Letters Patent No. 114,677, dated May 9, 1871.

IMPROVEMENT IN WINDMILLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LOREN EDWIN HAZEN, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and valuable Improvement in Windmills; and I 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 of the drawing is a top view of my invention.

Figure 2 is a central vertical section.

Figure 3 is a front view.

The nature of my invention consists in the construction and arrangement of a windmill, and in order to enable others skilled in the art to make and use it, I will now proceed to describe it.

A represents the horizontal swinging arm or beam, at one end of which is the wind-board B, and at the other the wheel C.

This wheel is mounted upon a hollow shaft, D, having its bearings on the arm A.

Upon the inner end of the shaft D is an eccentric rod, E, for communicating motion to the mill.

The sails G are arranged in clusters or divisions on the wheel or frame C, and the sails of each division connected by a slipping-rod, *a*, and this rod connected to a crank-shaft, *b*, on the inner side of the wheel.

All the crank-shafts *b b* are connected with a plate,

d, on the outer side of the wheel, said plate being mounted upon a rod, *e*, which passes through the hollow shaft D, and is at its inner end provided with a socket-clutch, *f*.

This clutch is then, by suitable levers and rods, connected with a lever, H, within reach of the operator, so that he can, at any time, regulate the sails at will.

On the front side of the wheel C is hinged a lever, I, connected with the plate or sliding head *d*, and on said lever is hinged a fan, J, which, through the medium of the plate *d* and crank-shafts *b b*, presses the sails back out of the wind and keeps the same motion, even though the wind increases, after the motion is adjusted by the weights on the lever H below, said lever I and fan J thus acting as a regulator or governor of the mill.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

In combination with the wheel C, sails G, and head *d*, the lever I, and fan J, substantially as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LOREN EDWIN HAZEN.

Witnesses:

JOHN RAE NISBET,
HENRY J. BERRY.