Coleman & Strayer,

Wind-Wheel.

No. 105,915. Patented Aug. 2. 1870.

Fig. 1

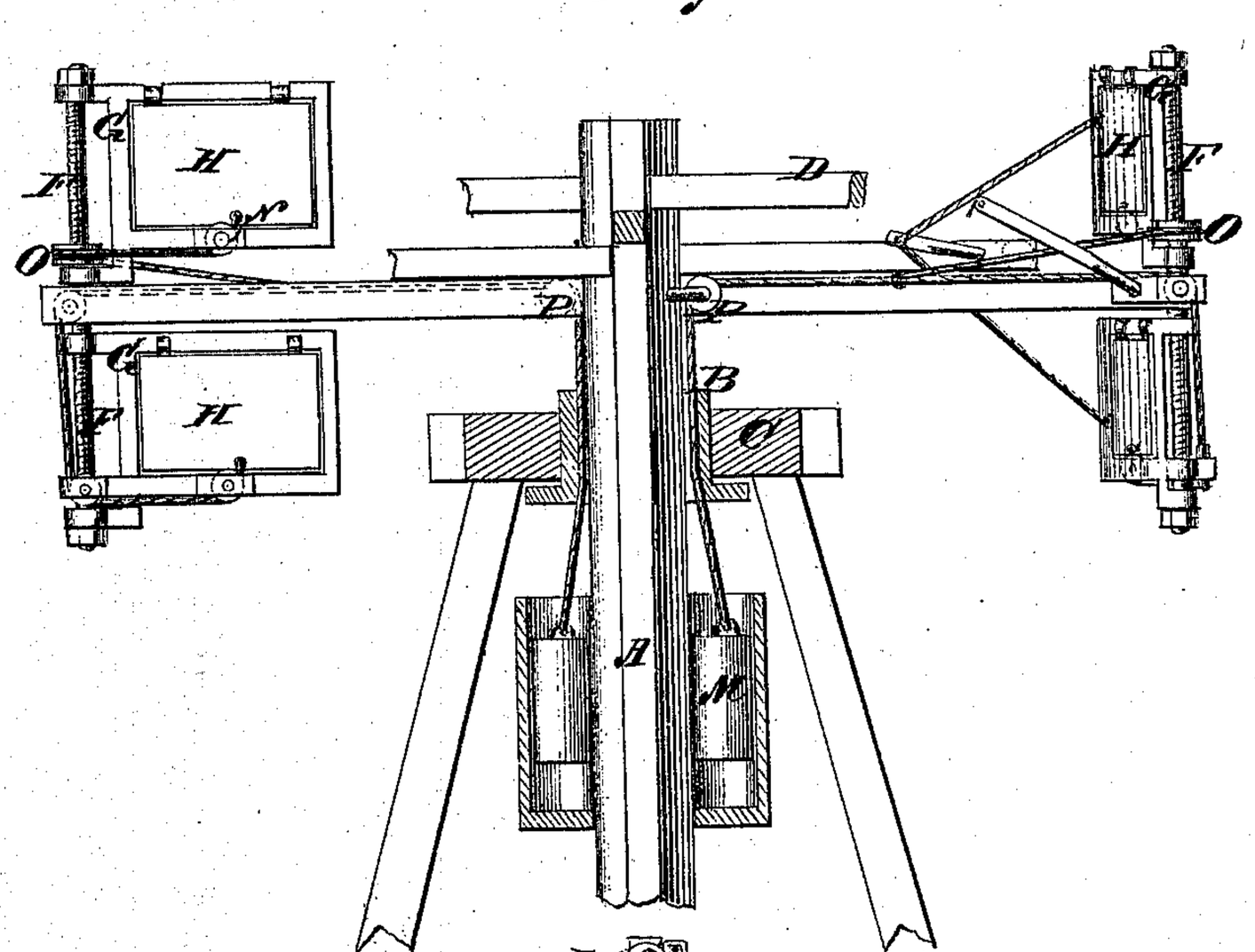
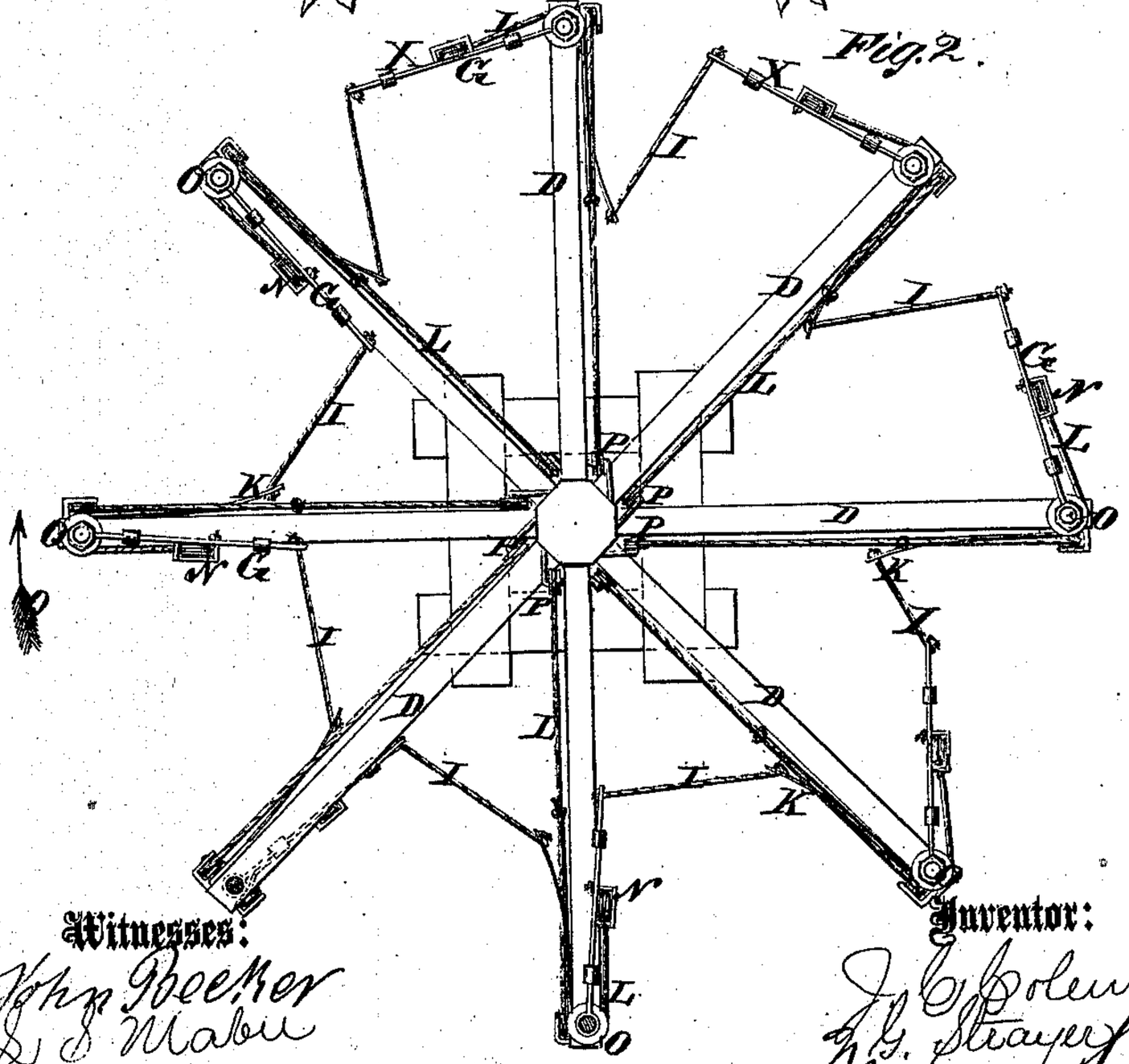


Fig. 2.



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JESSE C. COLEMAN AND GEORGE STRAYER, OF CLINTON, KANSAS.

Letters Patent No. 105,915, *dated August* 2, 1870.

IMPROVEMENT IN WIND-WHEELS.

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

To all whom it may concern:

Be it known that we, JESSE C. COLEMAN and GEORGE STRAYER, of Clinton, in the county of Douglas and State of Kansas, have invented a new and useful Improvement in Wind-Wheel; and we 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 drawing forming part of this specification.

This invention relates to improvements in horizontally revolving wind-wheels, and consists in an improved arrangement at the ends of horizontal arms, on a vertical shaft, of pairs of vanes, one above and the other below the said arms, and hinged to swing vertically in frames hinged to swing horizontally on vertical rods supported on the arms, the said frames being attached by cords to springs on the next arms behind, to resist the action of the wind, and the vanes being connected by cords to weights, rising and falling near the shaft, to hold them against the action of the wind, and to allow them to rise, and present less surface thereto when it blows strong.

The arrangement is such that the vanes are held diagonally on the returning side, so as to obtain a reactionary effect of the wind while it is acting directly on the other side.

Figure 1 is a sectional elevation of our improved wind-wheel, and

Figure 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

A is the main vertical shaft, mounted in a suitable step at the bottom, and supported in a bush, B, at the top of the frame C, in any suitable or preferred way.

D represents the horizontal arms, of which there may be eight, or any other preferred number.

F represents vertical rods, mounted in the ends of the said arms, and projecting about equally above and below them.

G represents frames hinged to these vertical rods, two to each, one above and the other below the arms D, and to swing horizontally, and with their free ends hanging inward or toward the shaft A, when receiving the direct action of the wind.

H represents the vanes, hinged at the upper edges to the frames G, so as to swing in vertical planes.

The free ends of the frames are connected, by cords I, to springs K, attached to the next arm D behind, the said cords being about the right length to hold the frames parellel with the arms D, on which they are mounted.

The lower edges of the vanes are connected, by cords L, to weights M, suspended in pockets around the shaft A by the said cords, which pass over the pulleys N, O, and P. The pulleys N are immediately below the vanes, and so control the cords that the vanes are held in vertical planes, except when the force of the wind on them is such as to cause the weights to rise.

The wind, blowing in the direction of the arrow Q, will act directly on the sides of the vanes and the frames, which will be held against it by the springs and the weights, until they arrive at the points where it acts upon the upper sides; here they will be turned outward to the position represented at *x*, in which the frames are held by the cords I and springs K, so that the wind has a reactionary effect on them until they arrive at or near the point for taking the wind directly again.

If the wind is to strong for the weights to maintain the vanes, so as to take the full effect, they will swing upward, and allow it to escape, and prevent damage by too great force. The weights may be calculated and arranged, as to capacity to rise and relieve the machine, when the wind is stronger than it can bear.

In consequence of the horizontal motion of the frames which support the vanes, the wind will act upon our improved wheel in the same manner, no matter what may be the direction in which it blows, without the intervention of turrets, or other apparatus for shielding the vanes on the returning side.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

1. The combination, with the arms D, of the swinging frames G, the vanes H, arranged to swing in the said frames, the weighted cords L, and the cords I, connecting the frames with the next arms behind or springs thereon, all substantially as specified.

2. The combination, with the vanes hinged to swing in vertical planes, of the cords L, pulleys N O P, and weights M, substantially as specified.

3. The arrangement, with the arms D and the vertical rods F, of the pairs of swinging frames G, and the vanes H, substantially as specified.

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