

# D. Strunk Wind Wheel.

N<sup>o</sup> 59729.

Fig. 1 Patented Nov. 13 1866.

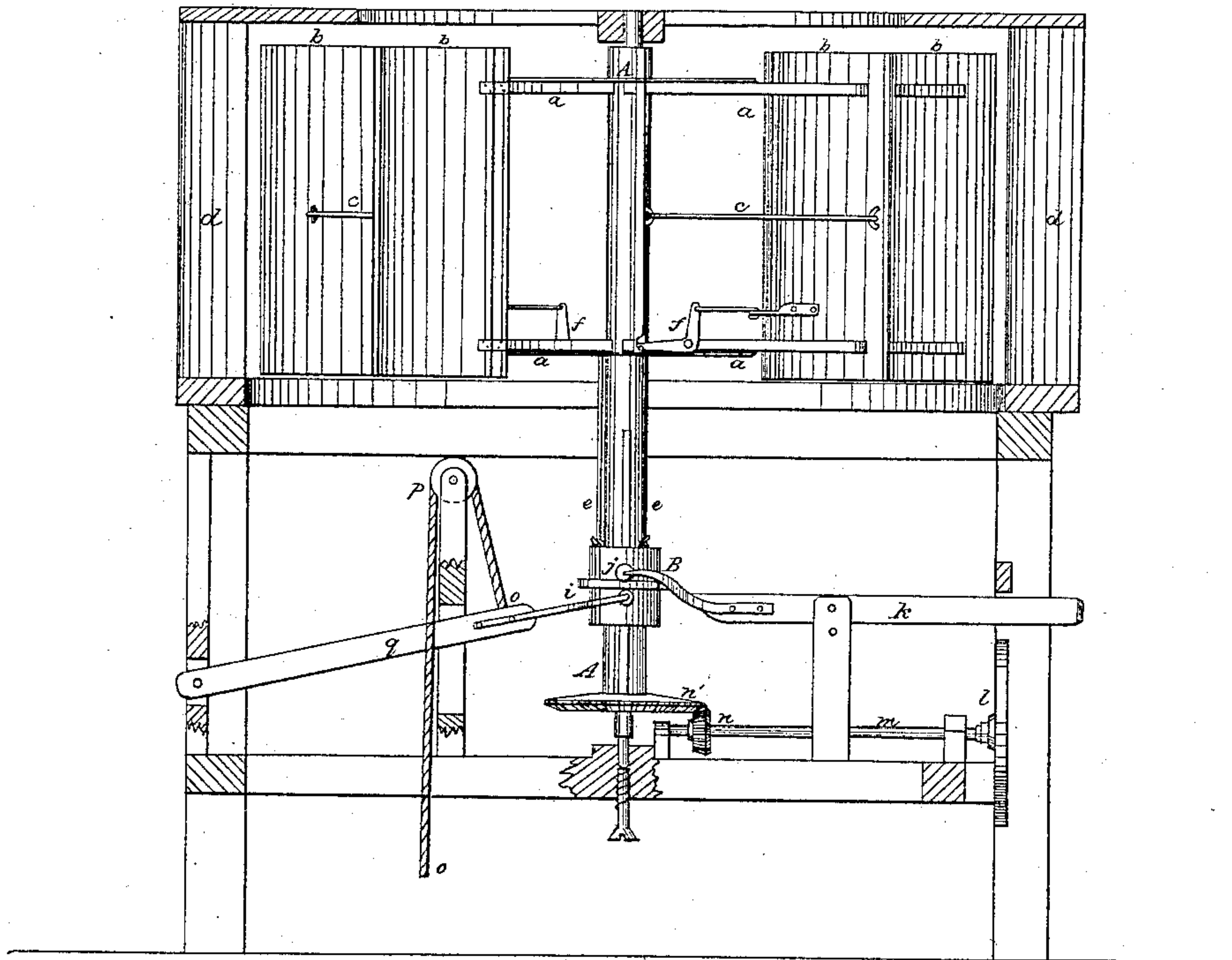
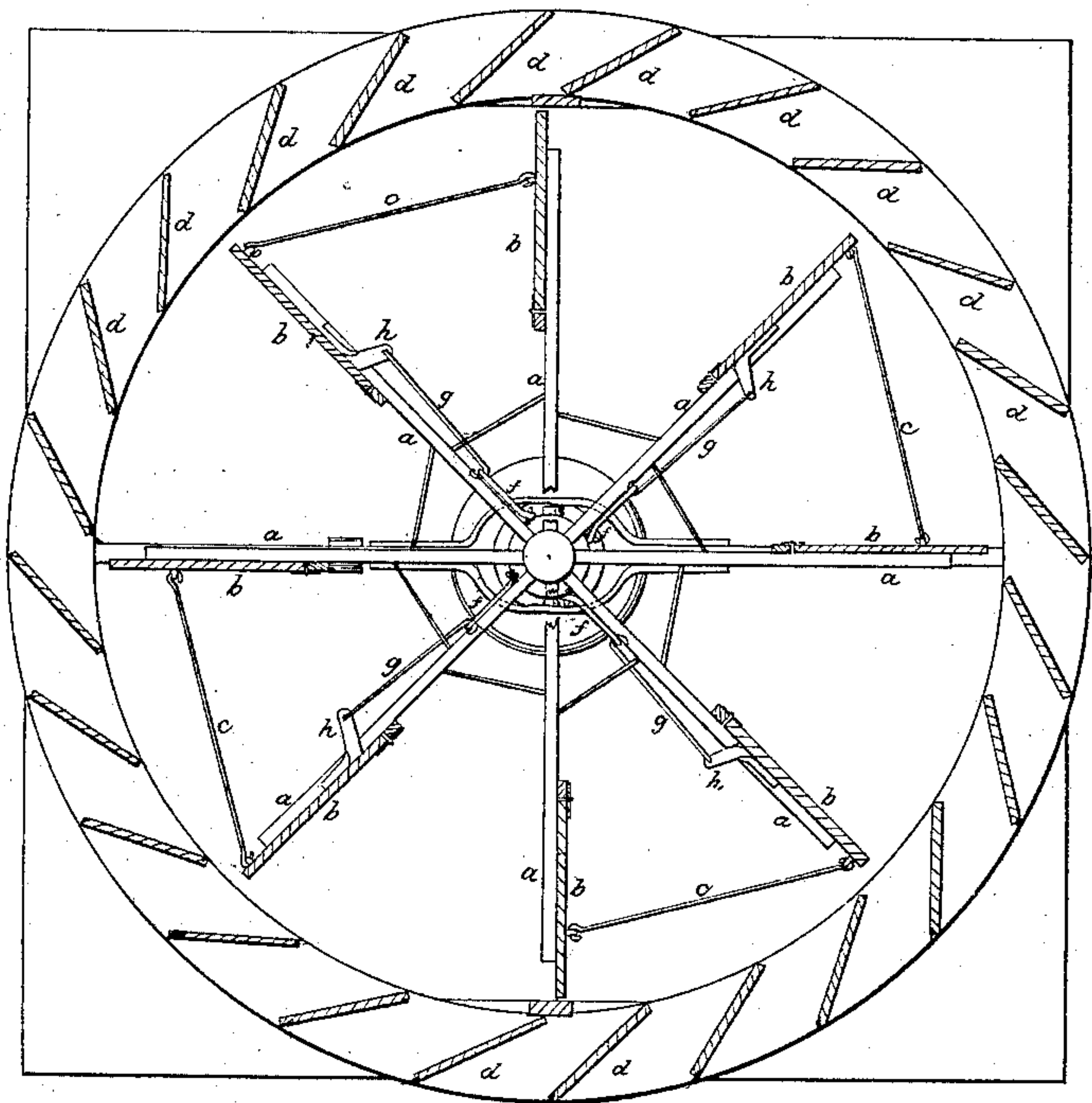


Fig. 2



Witnesses  
Wm. B. Langdon  
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# UNITED STATES PATENT OFFICE.

DANIEL STRUNK, OF JANESVILLE, WISCONSIN, ASSIGNOR TO HIMSELF AND FRANKLIN STRUNK, OF SAME PLACE.

## IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. 59,729, dated November 13, 1866.

*To all whom it may concern:*

Be it known that I, DANIEL STRUNK, of Janesville, Rock county, and State of Wisconsin, have invented a new and useful Improvement in Windmills; 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, forming part of this specification, in which—

Figure 1 is a vertical section of a windmill through the spindle. Fig. 2 is a transverse section through the wings and lower connecting-arms.

Similar letters of reference indicate like parts.

This invention consists in an improved mode of constructing windmills, for regulating the motive power of the wings or sails by means of self-acting apparatus connected with them, operated upon by a weight which rises and falls according to the strength of the wind, and opens and shuts the sails, thereby changing the angle at which the current of air passing through deflectors strikes them, and modifying their power of resistance.

The operating parts are made of iron, and are strong, cheap, and durable.

The mill is self-regulating, and is particularly adapted to raising water from wells on the prairies of the West, or may be used for any other purpose where economical intermittent power can be applied.

A A is a vertical shaft, having horizontal arms *a a a a*, to which the wings or sails *b b b b*, constructed in the ordinary way, are attached by hinges, as usual. The wings are all connected together by rods *c c c c*, fastened by staples, so that when the sails change their position and the angle they bear with relation to the arms *a a a a* and the current of the wind striking them, they shall all move together in unison. The wings are surrounded, as usual, by vertical deflectors *d d d d*, to direct the current of the wind upon them.

The position and the angle of the wings *b b b b* are regulated for high or light winds by a governor or ring-weight, B, suspended on the

shaft A, and connected with them by rods and levers. The rods *e e e e* connect the weight with the arms of bent levers *f f f f*, pivoted at the elbows on the lower set of arms, *a a a a*, and the levers *f f f f* are connected by the rods *g g g g* with brackets *h h h h*, bolted on the sides of the wings *b b b b*. In the ordinary position of the sails, with light winds, lying against the arms *a a a a*, the regulating-weight B hangs at its lowest point; but when the wind increases in strength the wings will blow out from the arms and raise the sliding weight by means of the connecting-rods, and thus moderate its power.

When the weight is raised to a certain point, a flange, *i*, upon the ring-weight B comes in contact with friction-rollers *j j* on the forked ends of a lever, *k*, which operates as a brake upon the rim of a fly-wheel, *l*, placed on the driving-shaft *m*, which derives motion from the shaft A through the bevel-gear *n n'*.

Instead of rigid rods and levers, ropes and pulleys may be used for opening the wings.

The motion of the mill may be checked in the same way by raising the weight B to the same point by means of the check-rope *o o*, running over the sheave *p*, and raising lever *q* till friction-rollers on the forked ends shall strike the under side of the flange *i* and push the weight up to bear against the rollers on the ends of the forked lever *k*.

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

1. The ring governor or weight B, in combination with the vertical shaft A and the connecting-rods *e* and *g*, the bent levers *f*, and the brackets *h*, fastened to the wings *b*, constructed and arranged substantially in the manner and for the purpose herein described.

2. The combination of the weight B with the lever-brake *k*, the friction fly-wheel *l*, lever *q*, and check-rope *o*, substantially as described, for the purpose specified.

DANIEL STRUNK.

Witnesses:

S. A. HUDSON,  
JOHN M. CASE.