

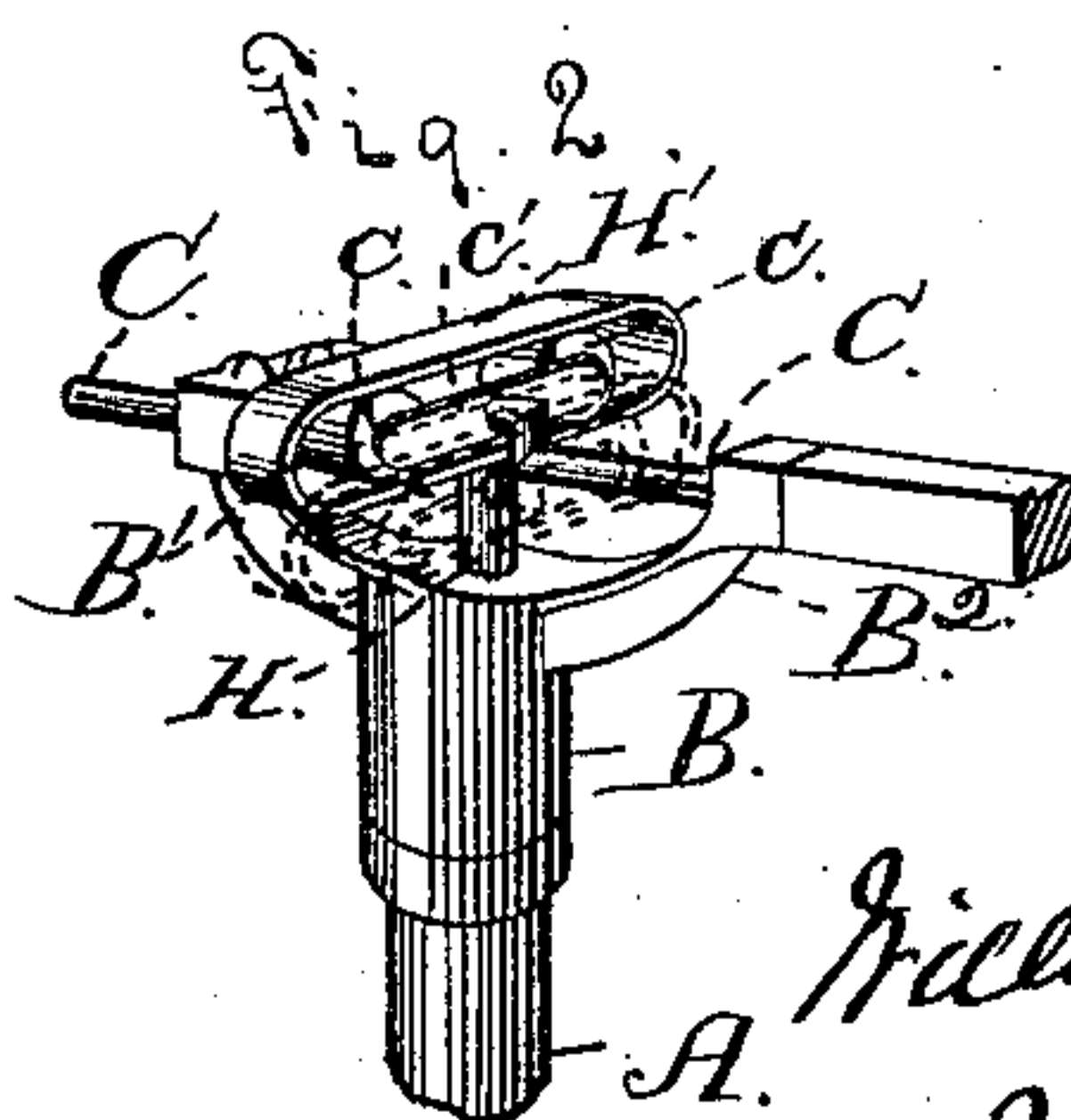
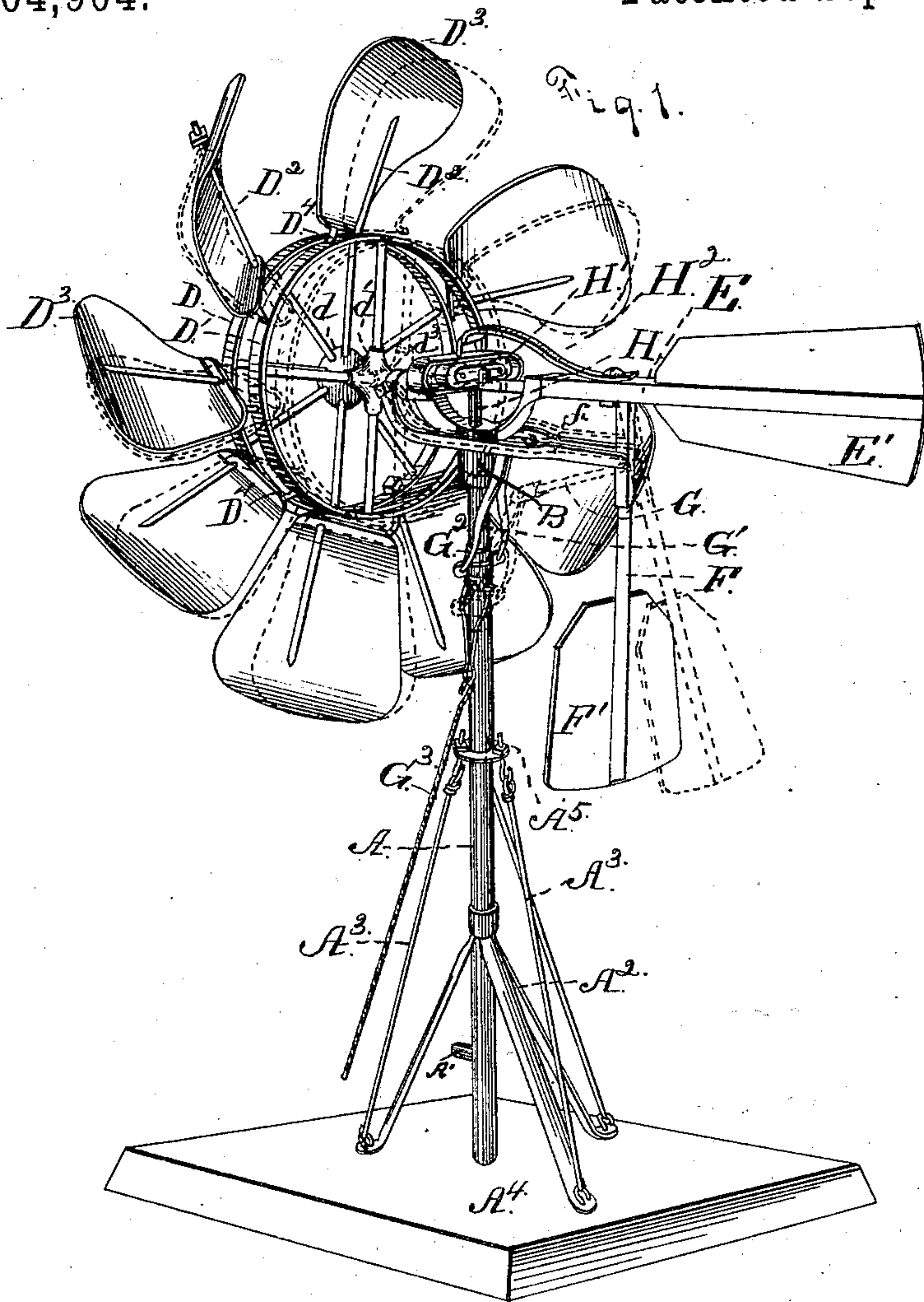
(No Model.)

2 Sheets—Sheet 1.

W. N. BRYAN.  
WINDMILL.

No. 304,904.

Patented Sept. 9, 1884.



Attest.  
W. A. Volant.

Julius Solger

Inventor

William N. Bryan.

Harold A. Snow.

Att'y

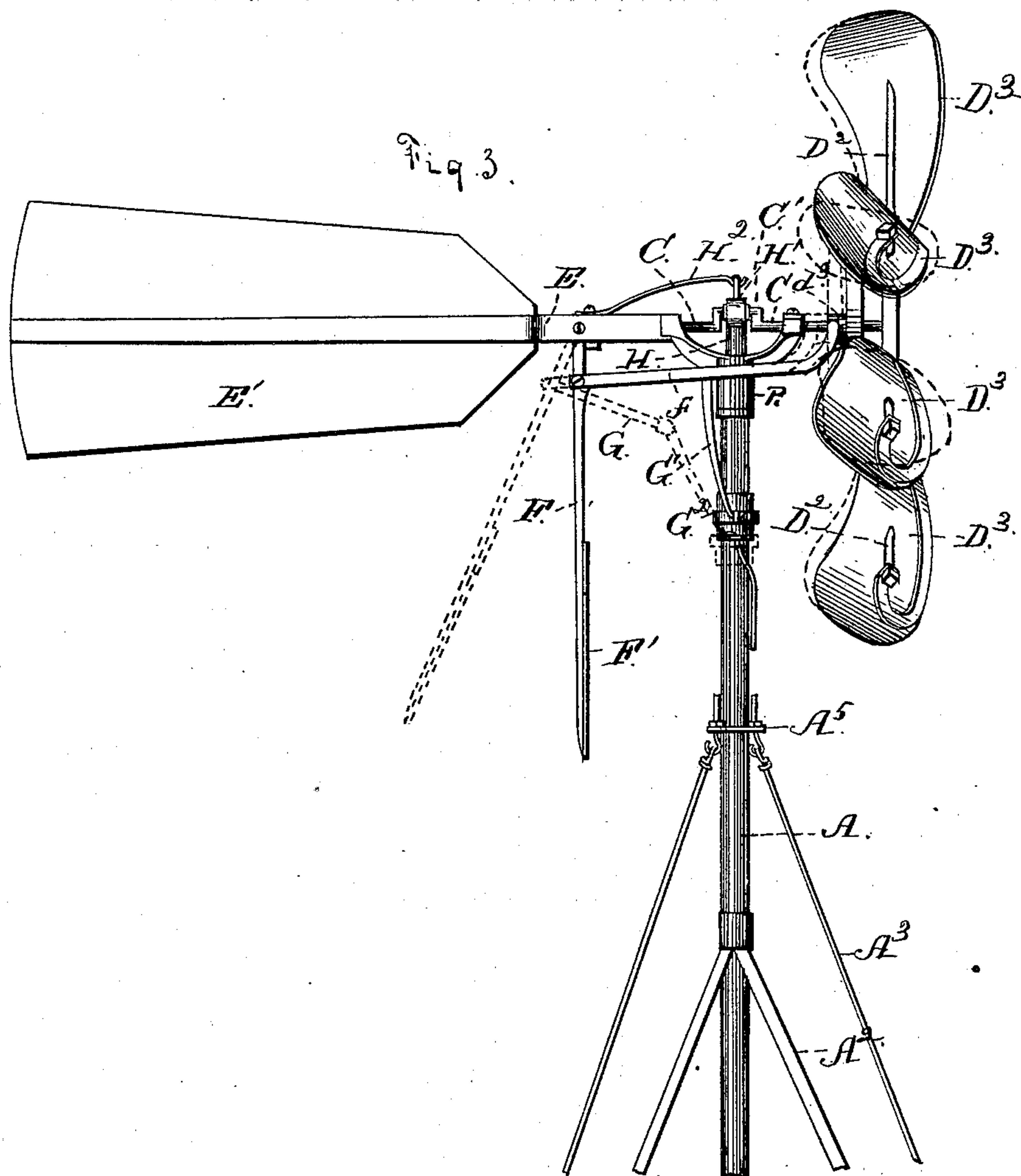
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W. N. BRYAN.  
WINDMILL.

No. 304,904.

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Attest,

W. H. Clark.

Julius Solger

Inventor.

William N. Bryan

Edward A. Snow

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# UNITED STATES PATENT OFFICE.

WILLIAM N. BRYAN, OF ADA, OHIO.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 304,904, dated September 9, 1884.

Application filed September 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. BRYAN, of Ada, county of Hardin, and State of Ohio, have invented a new and useful Improvement in Windmills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in a windmill; and it consists in the construction, combination, and arrangement of the several parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of my windmill. Fig. 2 shows in detail the pump-rod-operating mechanism; and Fig. 3 is a side view of my invention.

The standard or tower A is made tubular and water-tight, so as to serve as a stand-pipe above the pump-spout A', arranged the usual distance from the ground in the operation of the device, as will be described. This standard is strengthened by the brace A<sup>2</sup>, arranged as shown, and the guy rod or chain A<sup>3</sup>, secured at their lower ends to the eyebolt that fastens the braces to the base A<sup>4</sup>, and their upper ends are made fast to the flange-plate A<sup>5</sup>, secured on the standard.

The turn-table B is journaled on the upper end of the standard in suitable manner, and is forked at its upper end, providing the yoke composed of the arms B' B<sup>2</sup>. These arms are provided with bearings for the wheel-shaft C. This shaft C is formed with a crank, C', midway the arms B' B<sup>2</sup> and over the opening through the turn-table into the standard.

In constructing my wheel I employ the inner and outer supporting-ring, D' D, provided with suitable spokes, and having their hubs d d' secured on the shaft C, the former hub being keyed or fixed rigidly on the outer end of the shaft, and the latter being sleeved thereon between the hub d and the yoke turn-table B. The hub d' is constructed with a rearwardly-projected extension, on which is placed a collar, d<sup>3</sup>, so arranged that the hub may revolve independently of the collar, but is governed thereby in its longitudinal movements on the shaft in the operation of the machine. Radial arms D<sup>2</sup> are extended out from the ring

D and serve as a pivot for the fans D<sup>3</sup>, which are curved, as shown, and provided with openings near their forward ends, to receive this arm, on which the fan pivots. On the outer end of the arms D<sup>2</sup>, I turn nuts or other suitable retaining means. A short pin, D<sup>4</sup>, extends from the lower rear edge of the fans into the ring D', thereby connecting the said ring and the fans, so that when the former is moved back on the shaft it will tilt the fans and throw them out of the wind.

The vane-arm E, having vane E', is extended to the rear from the yoke B, being supported on arm B'. Hinged to the lower side of the vane-arm is a rod or bar, F, which is provided at its lower end with the wind-board F', arranged normally in a plane parallel to that of the wheel. The bar F is connected with the collar d<sup>3</sup> by bars f f passing on opposite sides of the standard. Thus, in a high wind it will be seen the wind-board F will be forced back and by its connections with the hub d' will draw the same back on the shaft C, tilting the fans and throwing the wheel out of the wind, as clearly shown in dotted lines. The board F is made of sufficient weight to not be affected by the ordinary winds.

In order to operate the wheel from the ground I provide the short bar G, secured to the bar F, which extends forward therefrom between the bars f f close to the standard. The forward end of this bar is pivoted to the bars or links G', which are pivotally secured at their lower ends to the sleeve G<sup>2</sup>, sliding on the standard, and provided with a rope, G<sup>3</sup>, which hangs down within reach from the ground. By this means, it will be seen, the wheel can be readily thrown out of the wind at will, while the before-described device will operate automatically in case of a high wind.

The pump-rod H is provided at its upper end with the ring or loop H', which is flattened horizontally, as shown. The crank C' of shaft C operates in this loop, and is provided with a carriage composed of end rollers, c c, and side straps, c', operating in the loops, so that the motion is more easily communicated to the pump-rod and a smoother action is secured. The wrist of crank C, it will be seen, is journaled in the side bars, c', of the carriage and operates the same as the shaft is revolved.

A spring-bar, H<sup>2</sup>, is secured at one end on

the vane-arm, and at the other end to the loop H', and assists in the elevation of the pump-rod when the latter has been depressed.

The operation of my machine is simple and  
5 will be readily understood from the foregoing description.

What I claim as my invention is—

The combination of the tubular stand A,  
provided with a pump-spout, and braced as  
10 shown, the plunger H, having an elliptical collar and operating in stand A, and the shaft C,

provided with the crank C' and truck c', with the fans D being fastened to two hubs, one of which is loose and operated by the vane F', substantially as and for the purpose set forth. 15  
and described.

In testimony that I claim the foregoing I  
append my signature.

WILLIAM N. BRYAN.

Witnesses:

ROBERT BERRY,  
WM. LAUTZ.