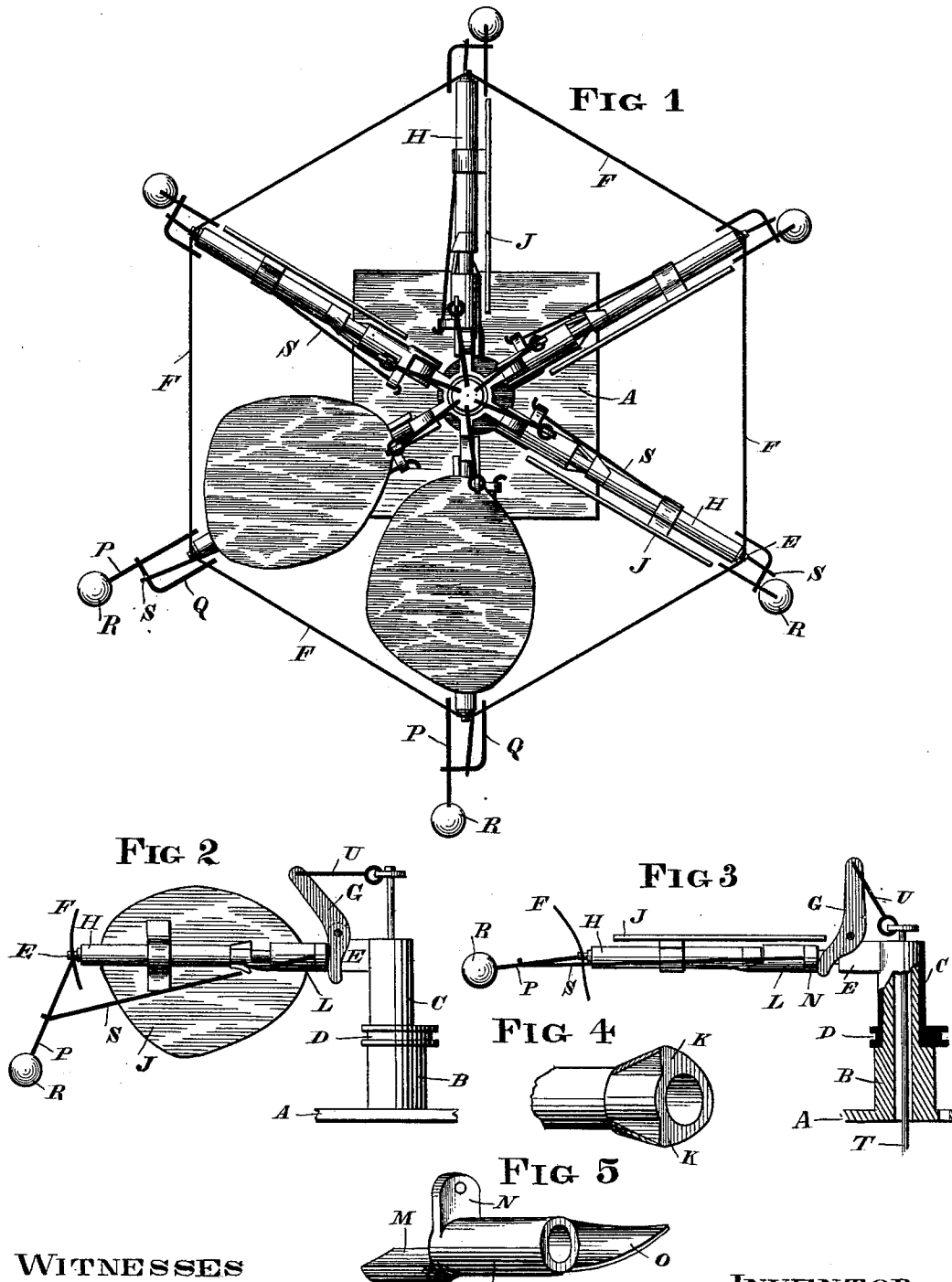


(No Model.)

H. P. JOHNSON.  
Windmill.

No. 231,430.

Patented Aug. 24, 1880.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

HENRY P. JOHNSON, OF SAN FRANCISCO, CALIFORNIA.

## WINDMILL.

SPECIFICATION forming part of Letters Patent No. 231,430, dated August 24, 1880.

Application filed March 29, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY P. JOHNSON, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Self-Regulating Windmills, of which the following is a specification.

The object of my invention is to provide a windmill the pitch of the fans of which will be automatically controlled by the face-pressure, and also in providing a means whereby the fans can be turned edgewise to the wind when deemed desirable to do so, and to dispense with the use of a vane.

My invention consists in the arrangement of the fans, whereby they are rendered self-adjusting to suit the force of the wind, and in the construction and arrangement of the sleeves to which the blades are connected, as herein-after more fully described and claimed.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a plan view of a windmill embodying my invention, and in which two of the fans are shown turned away from the wind. Fig. 2 is a detail view, showing in side elevation the position of the fan and bell-crank lever when the mill is in a working position. Fig. 3 is a detail view, partly in section, showing the position of the fan and bell-crank lever when the fans are turned away from the wind. Fig. 4 is a perspective view of the inner end of the sleeve or tube which carries the fan. Fig. 5 is a perspective view of the sleeve or tube which is actuated by direct contact with the bell-crank lever.

The platform A supports a hollow shaft, B, and upon it turns the hollow cylinder C, which is provided with an eccentric, D, which is connected by suitable gearing to the pump-rod or pitman, which plays through an opening in the platform.

The hollow standard or cylinder C is provided with radial arms or rods E, which are braced by the rod F, which is secured to their outer ends, and to the inner ends of these arms I pivot the bell-crank levers G G.

Upon the radial arms slide the sleeves H H, which carry the sails or fans J J.

Upon the inner ends of the sleeves H H, I form lugs or projections K K, as is clearly shown in Fig. 4.

Upon the inner ends of the radial arms E E, I place a short sleeve, L L, which has a backward extension, M, which serves to guide it upon the arm E and prevent it from turning thereon. It also has an ear or lug, N, and an inclined or wedge-shaped finger, O, which engages in the notch between the two lugs K K.

To the stay-rod F, and on either side of the arm E, I attach two rods, P Q. One end of the rod Q is bent around the rod P, to hold it to its place, and on the end of the rod P, I securely attach a weight, R, so that by centrifugal force or action these weights will be thrown outward and raise the fans flatwise or horizontally and retard the movement of the wheel.

To the ear N, I attach a rod, S, which is connected to the rod Q.

Through the hollow shaft B passes a rod, T, provided at its upper end with a disk, to which I attach rods U, which are also attached to the bell-crank levers G G.

The operation of my windmill will be as follows: When the wind blows with too great a force the rapid revolution of the radial arms will cause the weights R to stand out from the center of the wheel upon the same principle as the governors of a steam-engine, and in doing so the short sleeve will be drawn out from the center of the wheel, and the finger O will engage with the lugs K K and cause the sleeve H to be partially rotated upon the arm E, and thereby turn the edge of the fan to the wind. As the force of the wind decreases, the weight will resume its original position, at the same time forcing, by means of the rod S, the short sleeve L back to its original position, and the fan, which is so hung that its center of gravity is to one side of the rod E, will then resume its original position with its face to the wind.

When it is desired that the windmill shall not be operated the rod T is pulled down a short distance and secured in place, and the drawing down of this rod will operate the bell-

crank levers G G, the lower ends of which press  
against the sleeve L, the finger of which will  
engage with the lugs K K, thereby partially  
rotating the sleeve H, and throw the edge of  
5 the fan to the wind, in which position the wind  
will have no effect upon the fans.

It is evident that any number of fans may  
be used, yet three or four will be sufficient in  
ordinary cases.

10 Having thus described my invention, what  
I claim, and desire to secure by Letters Pat-  
ent, is—

1. In a self-regulating windmill, the fans or  
sails of which revolve in a horizontal plane,  
15 the combination of the radial arms E E, slid-

ing sleeves H L, and the weighted arm or  
lever P, all constructed, arranged, and operat-  
ing substantially as shown and described.

2. In a windmill, the combination of the fans  
J, radial arms E, sliding sleeves H L, bell- 20  
crank levers G G, and rods U T, all constructed  
and arranged to operate as and for the pur-  
pose specified.

In testimony that I claim the foregoing I  
have hereunto set my hand and seal this 15th 25  
day of March, 1880.

HENRY PERKINS JOHNSON. [L. S.]

Witnesses:

C. W. M. SMITH,  
HOLLAND SMITH.