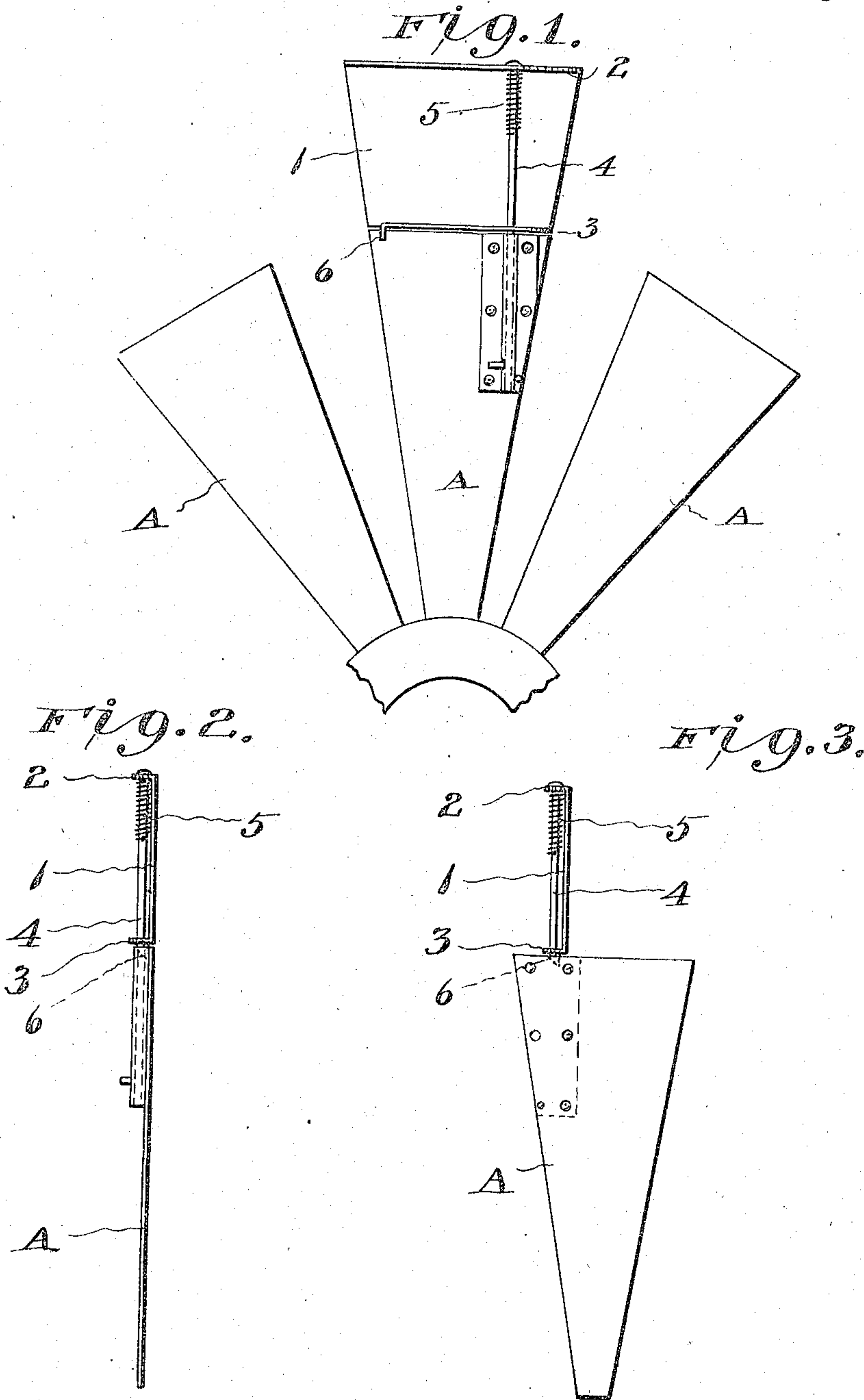


H. M. WALLACE.  
WIND WHEEL FOR WINDMILLS.  
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932,521.

Patented Aug. 31, 1909.



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# UNITED STATES PATENT OFFICE.

HUGH M. WALLACE, OF CLOVIS, TERRITORY OF NEW MEXICO.

## WIND-WHEEL FOR WINDMILLS.

932,521.

Specification of Letters Patent. Patented Aug. 31, 1909.

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*To all whom it may concern:*

Be it known that I, HUGH M. WALLACE, a citizen of the United States, residing at Clovis, in the county of Roosevelt and Territory of New Mexico, have invented certain new and useful Improvements in Wind-Wheels for Windmills, of which the following is a specification.

My invention relates to windwheels and has for its object the provision of means for increasing the power of the wheels when it is found that the force of the air currents is insufficient to perform the work and consists in pivotally securing plates to the ends of the blades so as to increase their area, the pivot pins for said plates being off the center of the blade and plate so that an excess of air pressure will turn the plate with its edge to the wind so as to decrease the area of the wheel and reduce its speed. A spring secured to the pivot pin and engaging the plate serves to hold the plate in operative position against the force of an ordinary wind.

The construction and operation of my improved windwheel will be described in detail hereinafter and illustrated in the accompanying drawings in which—

Figure 1 is a rear view of a fragment of a windwheel showing my improvement secured thereto, Fig. 2, an edge view of one of the blades and the addition, and Fig. 3, a front view showing the addition in the position assumed when there is excessive air pressure.

In the drawings similar reference characters indicate corresponding parts in the several views.

A indicates the blades of an ordinary windwheel. The plates comprising additions may be, as shown, shaped to conform to the contour of the blades A and when in position have the appearance of being a part of the blade, or they may be any other shape desired. Each plate 1 has its upper and lower edges provided with rearwardly extending flanges 2 and 3, respectively, and the plates are pivotally secured to the outer edges of the blades by means of shafts 4 secured to the rear of the blades on which the flanges 2 and 3 are journaled.

Shafts 4 are arranged at one side of the median line of each blade and parallel therewith and the plate 1 is held in position as a continuation of the blade by means of a coil spring 5 mounted on each shaft 4 and having

one end secured to the shaft while the other end engages the rear side of the plate.

6 indicates a lug formed by turning down one end of the flange 3 that engages the outer edge of blade A to limit the forward movement of the plate 1 under the impulse of spring 5.

In operation it will be understood that the plates 1 are held in position to receive the force of the wind by means of springs 5 but when the force of the wind is sufficient to overcome the strength of the springs the plates rotate on the shafts 4 so as to present their edges to the wind and the area operated upon by the wind is reduced to the wheel A. When the force of the wind diminishes the springs 5 swing the plates 1 into the first described position so that they offer resistance to the wind and the area of resistance of the wheel A is correspondingly increased.

Having thus described my invention what I claim is—

1. In combination with the blades of a windwheel, a plate pivotally secured to the outer edge of each blade and arranged to swing on an axis parallel to the axis of the blade.

2. In combination with the blades of a windwheel, plates pivotally secured to their outer edges and arranged to swing on axes parallel with the axes of the blades, and springs engaging the plates to hold them so that the planes of their faces normally coincide with the planes of the faces of the blades.

3. In combination with the blades of a windwheel, a shaft secured to each blade, and extended beyond the outer edge thereof, a plate journaled on said shaft, and means to hold the plate so that the planes of its faces coincide with the planes of the faces of the blades.

4. In combination with the blades of a windwheel, a shaft secured to each blade at one side of its median line and extended beyond the outer edge of the blade, a plate journaled on said shaft, and means to hold the plate so that the planes of its faces coincide with the planes of the faces of the blades.

5. In combination with the blades of a windwheel, a shaft secured to each blade at one side of its median line and substantially parallel therewith and extended beyond the outer edge of the blade, a plate journaled on



said shaft, and means to hold the plate so that the planes of its faces coincide with the planes of the faces of the blades.

6. In combination with the blades of a windwheel, a shaft secured to each blade and extended beyond the outer edge thereof, a plate journaled on said shaft, and a spring secured to the shaft and engaging the plate to hold it so that the planes of the faces of the plate coincide with the planes of the faces of the blades.

7. In combination with the blades of a windwheel, a shaft secured to each blade at one side of its median line and extended beyond the outer edge thereof, a plate journaled on said shaft, and a spring secured to the shaft and engaging the plate to hold it so that the planes of the faces of the plate coincide with the planes of the faces of the blades.

8. In combination with the blades of a windwheel, a shaft secured to each blade at one side of its median line and substantially parallel therewith and extended beyond the

outer edge thereof, a plate journaled on said shaft, and a spring secured to the shaft and engaging the plate to hold it so that the planes of the faces of the plate coincide with the planes of the faces of the blades.

9. In combination with the blades of a windwheel, a shaft secured to each blade and extended beyond the outer edge thereof, said shaft being at one side of the median line of the blade and substantially parallel therewith, a plate having flanges extending laterally from its upper and lower edges, said flanges journaled on the shaft aforesaid, a lug on the lower flange to engage the blade, and a spring secured to the shaft and engaging the plate to hold it so that the planes of the faces of the plate coincide with the planes of the faces of the blades.

In testimony whereof I hereto affix my signature in the presence of two witnesses.

HUGH M. WALLACE,

Witnesses:

A. B. HUBBARD,  
W. W. ODOM.