E. S. SMITH.
Wind-Mill.

No. 208,208. Patented Sept. 17, 1878

Fig. 1

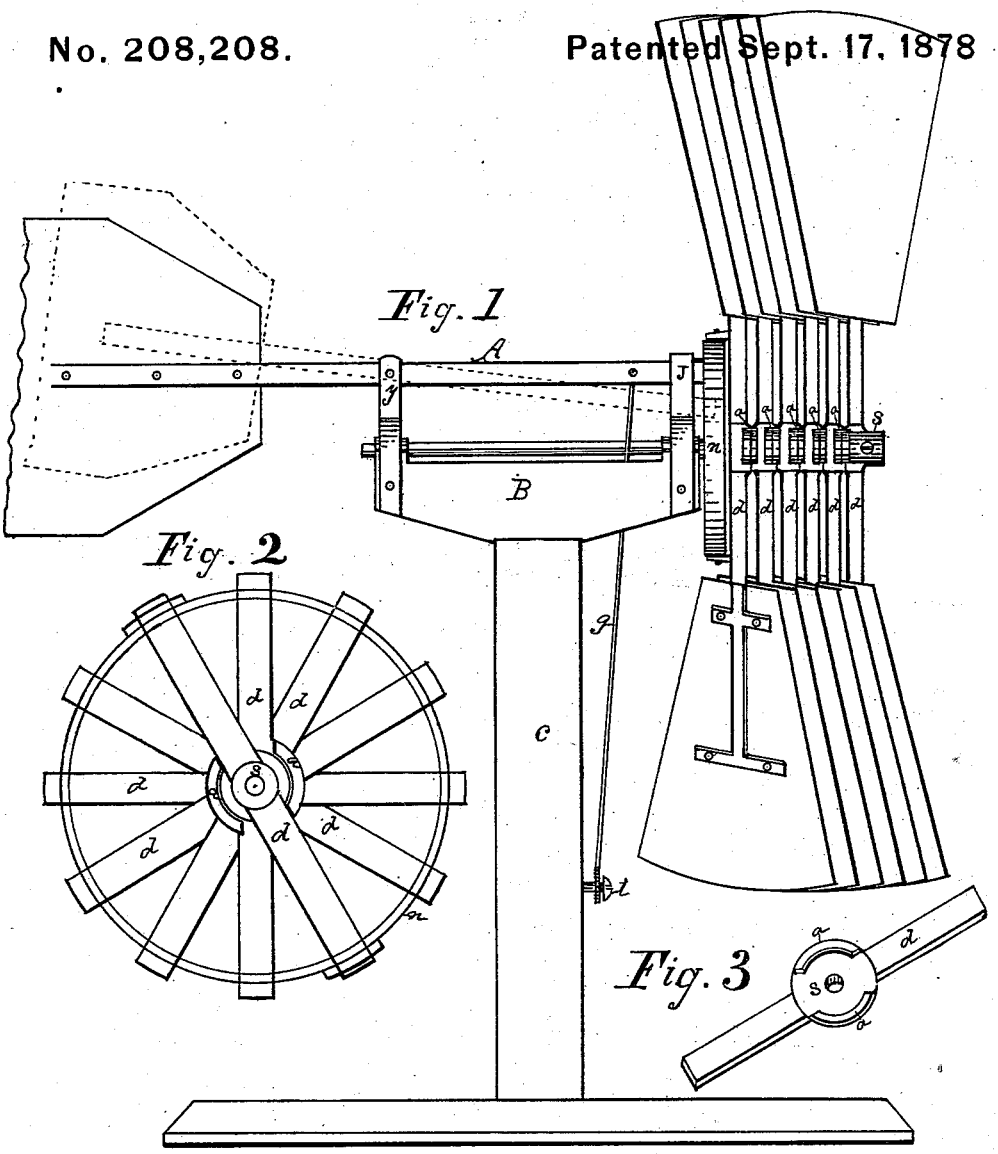

Fig. 2

Fig. 3

WITNESSES.

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ELIJAH S. SMITH, OF GOOD HOPE, ILLINOIS.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **208,208**, dated September 17, 1878; application filed August 14, 1878.

To all whom it may concern:

Be it known that I, ELIJAH S. SMITH, of Good Hope, in the county of McDonough and State of Illinois, have invented a new and useful Improvement in Windmills, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

This invention relates to that class of windmills with folding wheels; and its novelty consists, first, in suitable stops fixed to the hub, which allows each arm to revolve only one-sixth of the circle of the wheel, so that when the wheel is spread out to a full circle the arms are at equal distances from each other, each arm giving out the full power of the wind; second, in the combination, with a brake-wheel, of a pivoted tail-board, which is fully explained in the general description.

In the drawings, A, Figure 1, represents the tail-board, which is pivoted to the piece *y*. The front part of the beam end of the tail-board passes through the guides J and under the rim of the brake-wheel *n*.

B represents the cross-head on the standard C. On the cross-head B there are suitable bearings for the shaft, which extends out beyond the end of the cross-head to form a spindle for the wind-wheel, which is composed of six arms, *d*, to which the sails are secured in the usual angle. At the center of the arms *d*, where the shaft passes through them, a hub, S, is formed, (see Fig. 3,) which has projections *a*, that act as stops. These projections lap over a part of the hub of the next arm, and are for the purpose of allowing each arm to turn only one-sixth of the circle of the wheel, the front arm being rigidly secured to the shaft by means of the set-screw. The next arm in the rear will turn one-sixth of the circle, when it locks with the front arm. The third arm will then turn one-sixth farther and lock on the second arm, and so on until all the arms are locked together, making a full circle of the wheel, the arms being an equal distance apart. (See Fig. 2.) The last arm in the rear has secured to it a brake-wheel, *n*, on which the beam of the tail-board A acts as a brake. This is accomplished by pivoting the beam-end of the tail-board between the uprights *y*, and having sufficient weight on the vane to overbalance the beam sufficient to cause the necessary friction on the brake-wheel *n* to stop the wind-wheel. By means of the rod *g* the front end of the beam is drawn down, (shown in dotted lines, Fig. 1,) and hooked on the pin *i*, which frees it from the brake-wheel *n*, which leaves the wind-wheel free to be acted upon by the wind. The wheel is stopped at any time by unhooking the rod *g*, which allows the beam to act as a brake on the wheel *n*.

The manner in which the wheel adjusts itself to the wind, &c., is fully described in Letters Patent granted to me which are dated, respectively, May 5, 1874, and December 11, 1877.

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

1. The arms *d*, provided with hubs *s* and projections or locks *a*, substantially as shown and described, for the purpose specified.

2. The combination of the pivoted tail-board A and the brake-wheel *n*, substantially as and for the purpose set forth.

E. S. SMITH.

Witnesses:
THOS. J. PRICE,
WILLIAM T. PRICE.