W. Ap. WILLIAMS.

WIND-MILL.

No. 190,802. Patented May 15, 1877.

Fig. 1.

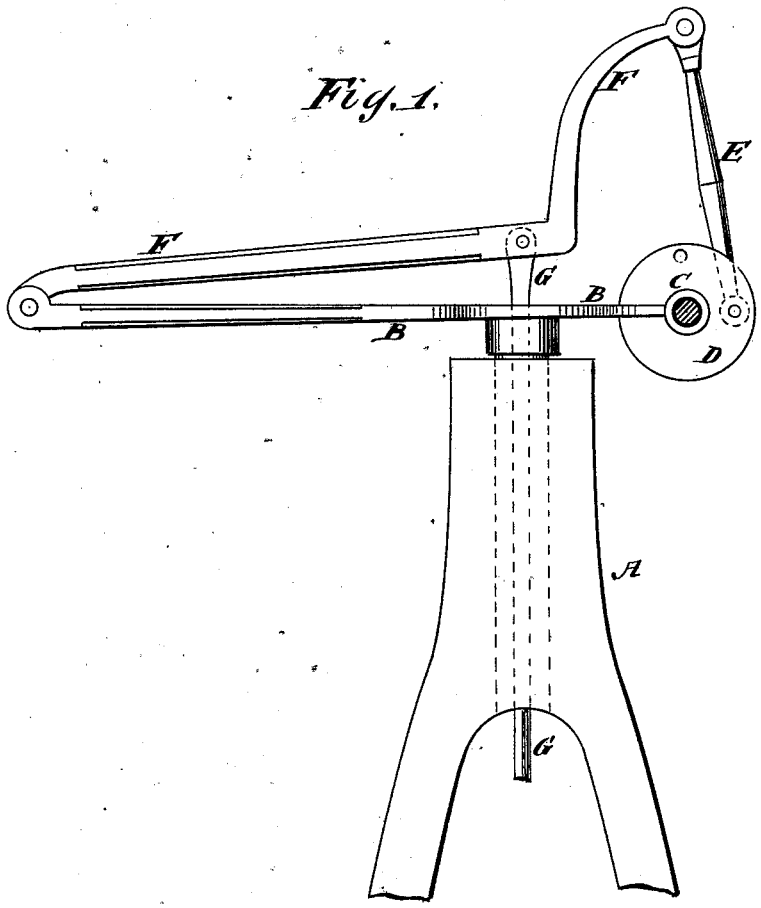
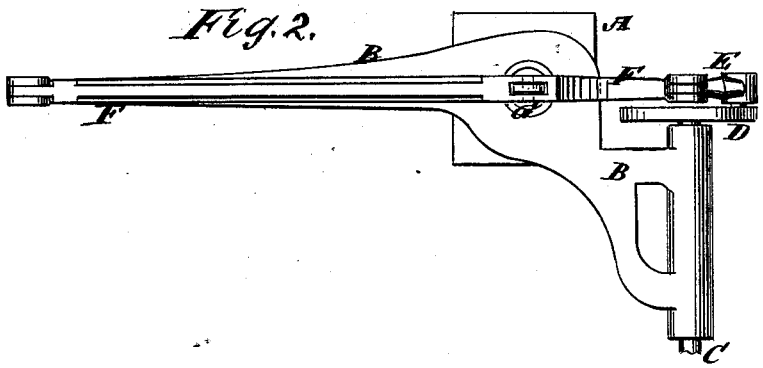



Fig. 2.




WITNESSES:

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BY

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# UNITED STATES PATENT OFFICE.

WILLIAM AP WILLIAMS, OF CAMBRIA, WISCONSIN.

## IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **190,802**, dated May 15, 1877; application filed April 23, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM AP WILLIAMS, of Cambria, Columbia county, Wisconsin, have invented a new and Improved Windmill, of which the following is a specification:

Figure 1 is a side view of a part of a windmill showing my improvement, and Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to diminish the friction in the working parts of the mill, and thus enable it to be run with a lighter wind than would otherwise be possible.

The invention consists in the curved lever and the connecting-rod, in combination with the turn-table, the pump-rod, and the crank of the wheel-shaft, as hereinafter fully described.

A represents the head-block, in which revolves the hollow spindle of the frame or turn-table B. Upon one end of the turn-table B is formed the bearing for the wheel-shaft C, to one end of which is attached the wheel, and to its other end is attached a small crank or crank-wheel, D, to the crank-pin of which is pivoted the end of a short connecting rod or link, E. The other end of the connecting-rod E is pivoted to the end of a lever, F, the other end of which is pivoted to the end of the turn-table B, opposite the wheel. G is the pump-rod, which passes up through the hollow spindle of the turn-table B, and its upper end is pivoted to the lever F. The lever F, from its rear end to the pivoting-point of the pump-rod G, is straight, and its forward part or arm is curved upward and forward, as shown in Fig. 1.

By this construction the friction and wear of the parts are greatly lessened, and the leverage is the same when lowering and when raising the pump-rod, so that the mill will run with a very light wind, thus making the mill much more reliable and effective in use.

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

The curved lever F and the connecting-rod E, in combination with the turn-table B, the pump-rod G, and the crank D of the wheel-shaft C, substantially as herein shown and described.

WILLIAM AP WILLIAMS.

Witnesses:

ROBERT H. WILLIAMS,

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