(No Model.)

J. W. BARBER.

WINDMILL.

No. 260,927. Patented July 11, 1882.

Fig. 1.

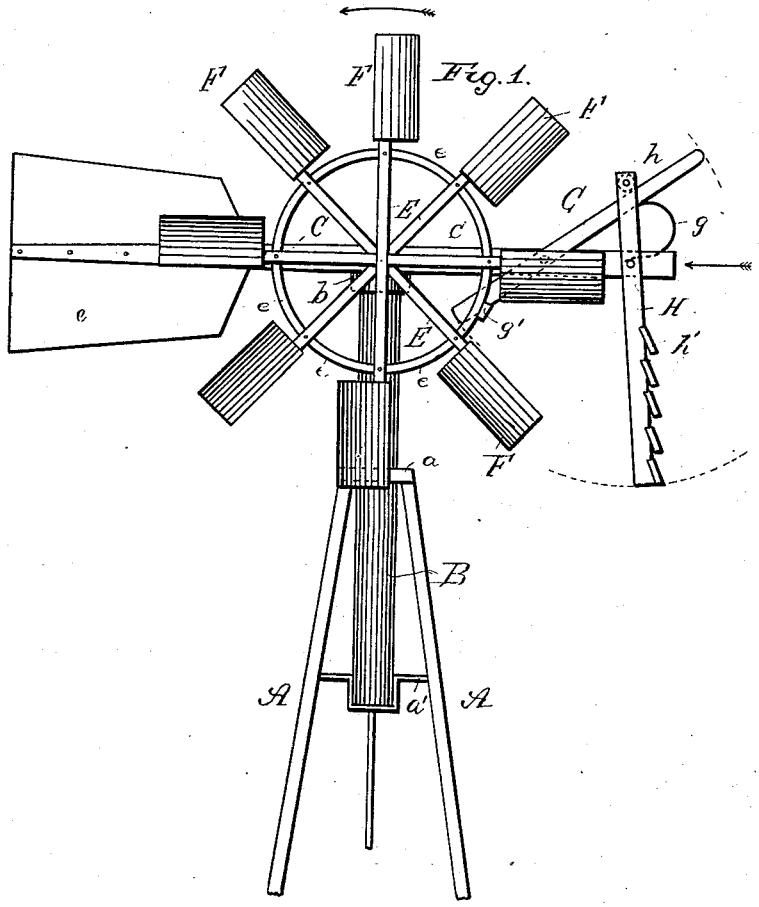
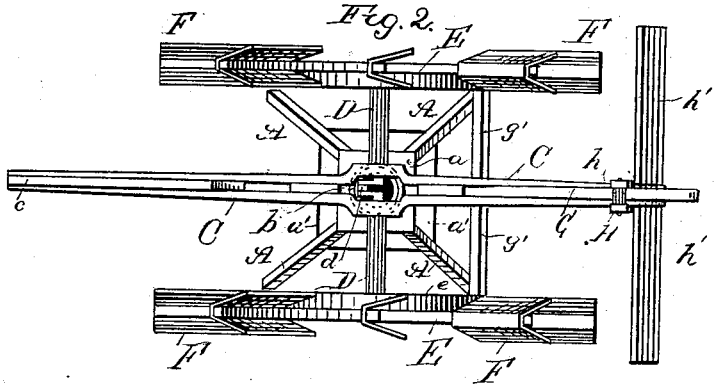


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSHUA W. BARBER, OF LENOX STATION, ILLINOIS.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 260,927, dated July 11, 1882.

Application filed May 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA W. BARBER, a citizen of the United States, residing at Lenox Station, in the county of Warren and State of Illinois, have invented certain new and useful Improvements in Windmills, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to windmills; and it consists in the construction and arrangement of its several parts, as will be hereinafter fully set forth, and pointed out in the claim.

In the drawings, Figure 1 is a side elevation, and Fig. 2 is a top plan view, of my windmill.

A are the supports. They are joined at their top by the plate *a*, through which is a hole of sufficient size to permit the passage of the stock B, the lower end of which is supported by the braces *a'*, as shown.

B is the mill-stock. It is set vertically in the supporters A, and over its upper end is placed a revolving collar, *b*, as shown. To the upper side of this collar are secured the paralleled horizontal frame-bars C C. They are enlarged at the point where they are secured to the collar *b*, so as to have sufficient space between them for the revolutions of the crank. Between the rear portions of the bars is secured the tail *c*, and between their forward portions is secured wind and fan brake mechanism.

Journaled horizontally through the bars C C, immediately over the collar *b*, is the fan-shaft D. It is provided with a crank, *d*, which revolves between the bars C C over the opening in the stock B, as shown. Secured to the outer ends of the shaft are fan-rods E. To their ends are secured the V-shaped fans F, which are so arranged that as they revolve to the top of the mill their concavities will be toward the brake. A circular band, *e*, extends around the rods next to the bars C and acts as a bearing, against which the brake foot-piece *g'* presses.

The wind and fan brake mechanism is arranged on the forward portion of the frame-bars C C, and consists of a lever, G, adapted to be pressed against the band *e* of a spring, *g*, adapted to release the tension from the lever, and of a wind-brake, H. The lever G is journaled in the frame-bars C C between the wind-brake and shaft D. Its free end extends up over the wind-brake and is embraced thereby. Its inner end is provided with a foot-piece, *g'*, which presses against the band *e*, as shown.

The wind-brake H is journaled vertically in the outer ends of the frame-bars C, and its upper end is slotted to receive the lever G, which is retained therein by the small roller *h*, as shown. The portion of the brake-rod below the frame-bars is provided with slats *h'*, set so as to slant outwardly, as shown. The object of this arrangement is to prevent the wind which comes in contact with the brake from exerting too strong a pressure upon it and allow the wind to pass through the brakes and be deflected upwardly against the under sides of the fans, thereby increasing the power of the mill. The spring *g* is placed between the top of the bars C and the under side of the lever G, and it operates to relieve the pressure of the foot-piece *g'* from the band *e* when no brake is needed.

In the operation of the mill the wind strikes the concaved side of the fans and revolves them in the direction of the arrow, Fig. 1. As they revolve around the wind is prevented from exerting a backward pressure upon them by the brake H. Additional power is given the mill by the pressure of the wind, which passes upwardly through the slats against the under side of the fans as they move past. In the operation of the brake mechanism the wind, pressing, when too strong, against the brake H, causes it to turn upon its pivot toward the fans. This movement is communicated to the lever G, depresses the outer end of it, thereby causing the foot-piece *g'* on its inner end to press up against the band *e*, the friction between the parts operating to reduce the number of revolutions of the fans or speed of the mill. When the wind is light the upward pressure of the spring *g* against the lever G will release the tension of the brake H upon the lever and cause its foot-piece to draw away from the band *e*.

What I claim is—

In a windmill, the brake mechanism consisting of the lever G, journaled in the frame-bars C, and provided with a foot-piece, *g'*, on its inner end, adapted to press against the bands *e* of the rods E, whereby the revolutions of the

fans F and shaft D are decreased, of the vertical brake H, journaled between the outer ends of the frame C, and provided with slots *h'* upon its lower portion, and having its upper end slotted and adapted to receive the lever G, which is retained therein by the anti-friction pulley *h*, and of the spring *g*, arranged between the lever G and the frame-bars C, all arranged and combined substantially as shown and described.

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

JOSHUA W. BARBER.

Witnesses:
JOHN B. SHELTON,
E. A. BALDWIN.