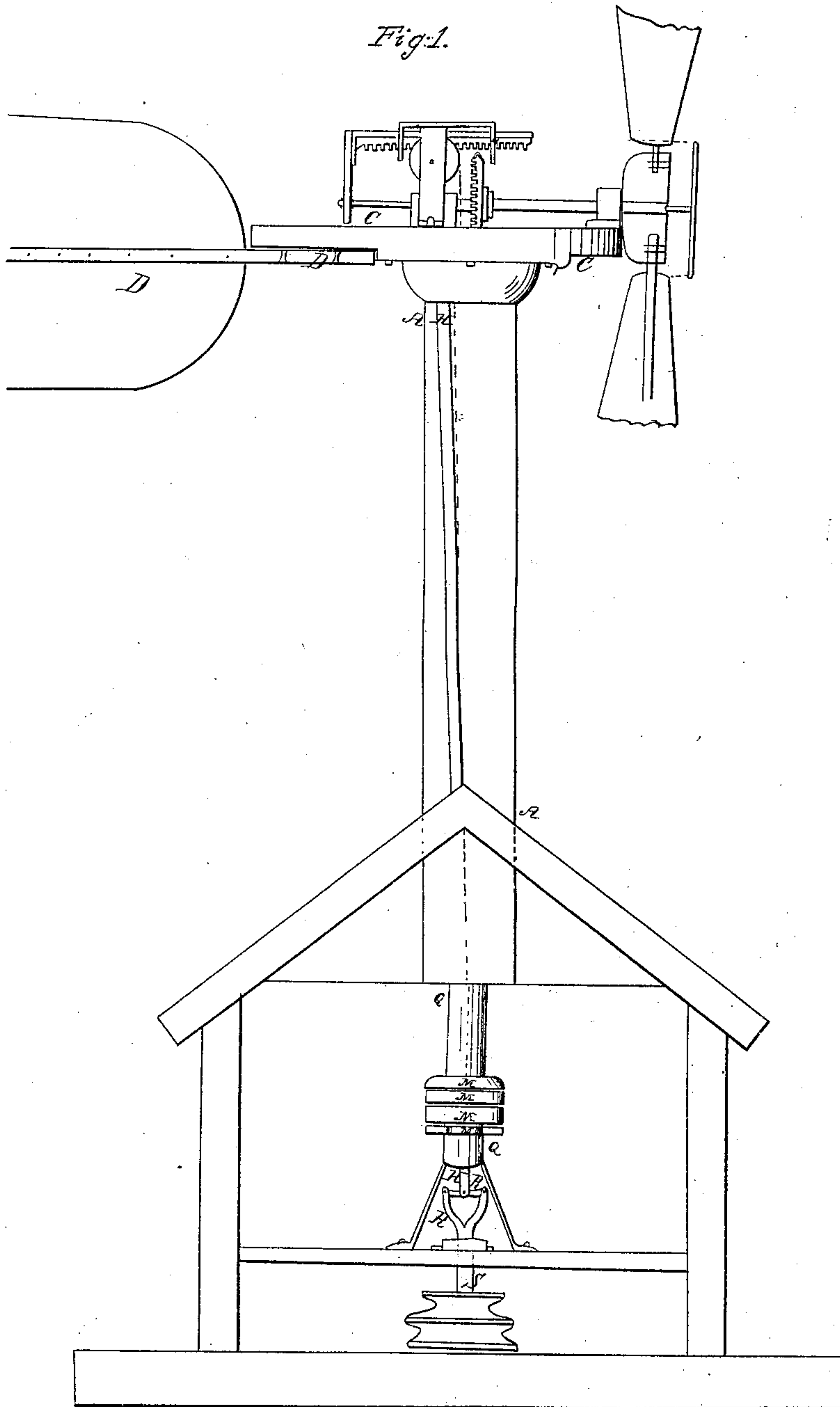


C. R. Webb,
Wind Wheel,

N^o 13,067.

Patented June 12, 1855.

Fig. 1.



Inventor.
C. R. Webb

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Fig. 3.

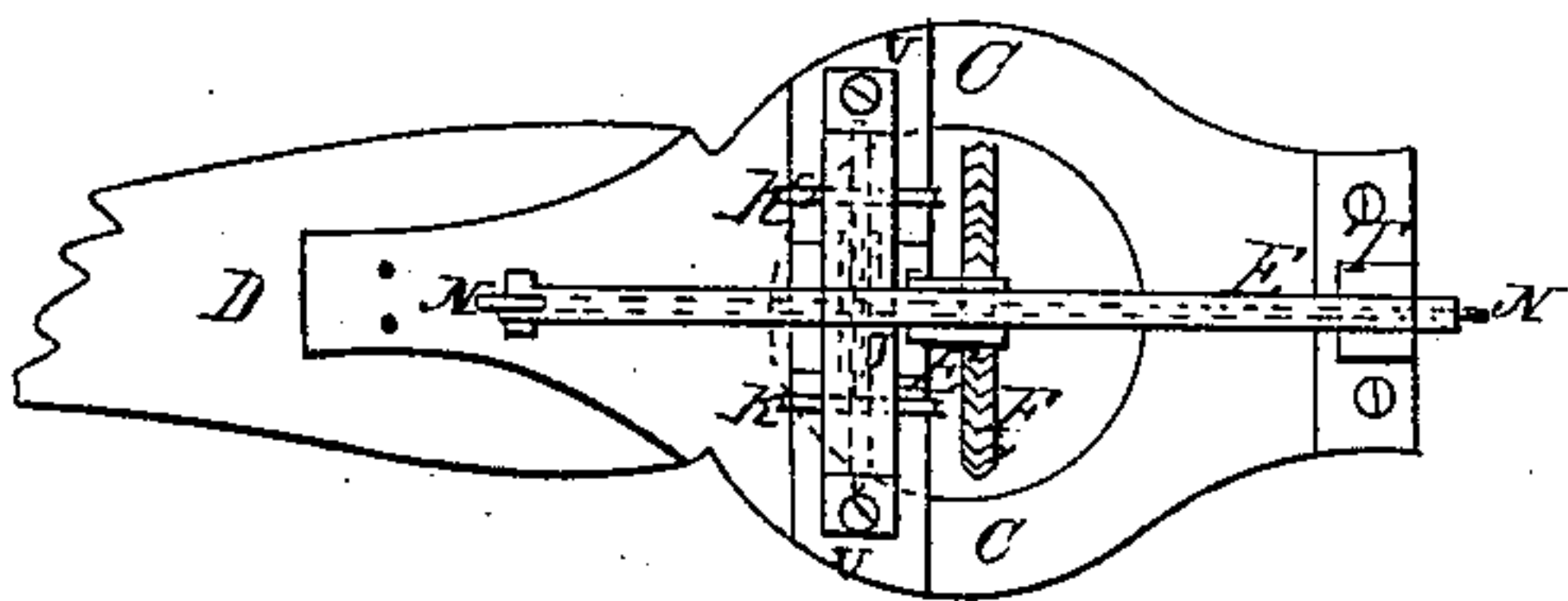
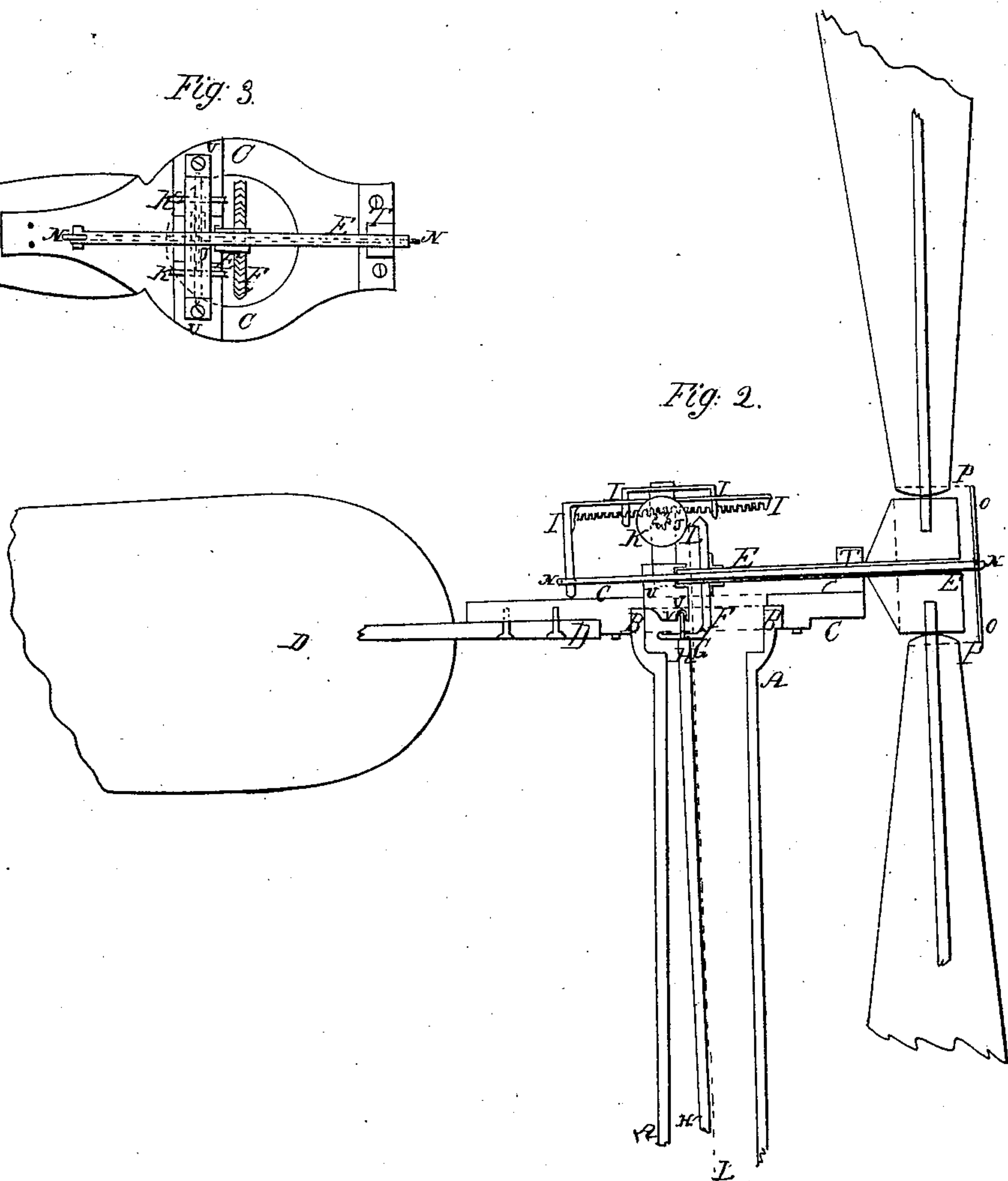


Fig. 2.



Inventor.
C. R. Webb

UNITED STATES PATENT OFFICE.

CHARLES R. WEBB, OF PHILADELPHIA, PENNSYLVANIA.

WINDMILL.

Specification forming part of Letters Patent No. 13,067, dated June 12, 1855.

To all whom it may concern:

Be it known that I, CHARLES R. WEBB, of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Windmills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in applying the power of the main shaft (on which the sails of a vertical windmill are placed) by a pair of wheels of any suitable kind or set of universal joints exactly in the center of the revolving head of the mill, so as to prevent the tendency of the sails when at work to turn from the wind consequent upon the old plan. To do this the upper journal of the shaft, which carries down the power, is placed in the same bar on the revolving head as the back end of the main shaft and with the changing of the wind is carried round with the head of the mill. The bar on the stationary head used in the old kind is thereby dispensed with. The lower end of said shaft is then placed exactly under the center of the head of the mill, and by a universal joint or other suitable device is connected with a perpendicular shaft descending to the lower part of the mill, from which the power is applied as required. The universal joint may be dispensed with by the last-named shaft having its upper end squared and the other shaft having a square tapering socket in which it shall so rest as to allow of its proper vibration at the top; also the rack and pinion or its equivalent connected by chains or cords to the weights for starting, regulating, or stopping the mill, which are arranged so as to bring them inside the mill, the whole so combined as to make a perfectly self-regulating windmill for grinding or other work in which rotary power is required, all of which is explained by the accompanying model, drawings, and description.

I do not claim anything as to the form of sails, as my invention can be applied to all kinds; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation; Fig. 3, a horizontal section of the revolving top or head.

In the drawings, No. 1 is a view of the open end of a house, out of the roof of which projects an upright iron pipe or timber A A, for the purpose of supporting a cast-iron hollow ring or collar with a flange B B, (see Fig. 2,) on which rests the revolving head C C, it being prevented from coming off by a ring which is screwed to the under side of the revolving head and which moves freely round the stationary head by the wind acting on the vane D D, which is firmly secured to the revolving head.

H H is the oblique shaft to convey the power to the upright shaft S, with which it is connected by a universal joint R R. In place of the universal joint, there may be used a tapering square socket fixed to the upper end of shaft S, in which the squared end of the shaft H H must be loosely fitted, the socket being wide enough on its upper part for the shaft H H to vibrate from side to side of the head of the mill with the changing of the wind.

The round pipe Q Q is fixed around the shaft H H, and is just so large that said shaft shall vibrate in it without touching, and only so high as the weights rise by the opening of the sails. The use of this pipe is to prevent the weights from swinging against shaft H H. The weights M M move freely on the pipe, and being hung on each side to the two chains L L revolve by the force of their own gravity with the turning of the head of the mill by the action of the wind on the vane D.

The shaft S is placed exactly under the center of the head of the mill.

Fig. 2: A A is the iron pipe or pieces of timber on which is fixed the cast-iron hollow ring or collar B B, on which rests the revolving head C C, and on which it turns freely when acted on by the vane, as shown in drawing No. 1. E E is the main shaft, which is hollow, on which is a miter-wheel F, gearing exactly in the center of the head of the mill into its mate G on the upper end of the oblique shaft H H. At I I I I is a rack with an arm and its frame, in which it slides freely, operated upon by the pinion J, on the shaft of which are two grooved pulleys K K, only one of which can be seen in this view, and in the grooves of which the

ends of two chains L L are fastened, descending the interior of the pipe A A into the house to the circular weights M M, made in sections, so as to be easily removed when desired to stop the mill, or attached by hooks and staples to each other, according as more or less power is required. The arm on the end of the rack I descends to a rod N N, which passes through the length of the hollow shaft E E. On the front end of said rod are fixed a number of arms O O, corresponding to the number of sweeps on which the sails are to be fixed. The ends of these arms are attached to the sails by short chains P P, and can be easily applied to almost every kind of sails. The rod N N passes through the arm on the end of the rack I and turns freely in it. It is secured to it by two pins through the rod, one before and the other behind said arm. It will be seen, therefore, that by elevating or depressing the weights M M the pulleys K, pinion J, and rack and arm I are operated, and that the rod N, being secured to the arm is caused to move in the direction of the length of the main shaft, and that the sails, being connected with the rod N by the arms O and chains P, are opened and closed by elevating or depressing the weights M M, while at the same time the turning of the main shaft is not impeded, as the rod N revolves freely with it. T is the bearing for the main shaft on the front of the revolving head C C. U U is a bar secured to the revolving head and in which the back end of the main shaft has its bearing. The upper end of the shaft

H H also turns in a projection on the under side of this bar, as seen at V, with its wheel G gearing into the wheel F. Said shaft then passes down the pipe A A, thence through a pipe Q Q, as seen in No. 1, to a universal joint R R on the upper end of the shaft S, from which the power is applied as needed.

Fig. 3 is a horizontal view of the revolving top of the mill; C C, the revolving top; E E, the main shaft, the dotted lines on which represent the rod N N; U U, the bar in the front of which the back end of the main shaft has its bearing. The front bearing of said shaft is seen at T. F is the miter-wheel on the main shaft. D is the piece of timber to which the vane or tail is fixed parallel to the length of the main shaft. J is the pinion working in the rack I, as seen in Fig. 2. K K are the two pulleys to which the chains L L are attached, also shown in Fig. 2.

I do not claim the general principles embraced in my arrangement of mechanisms for operating windmills; but

I do claim—

Placing the two cog-wheels in the head of the mill so that they shall gear into each other in center thereof, and bringing down the power from said wheels by an oblique shaft whose foot or bearing is vertically beneath the teeth in contact in the head of the mill.

CHAS. R. WEBB.

Witnesses:

C. ISARD,
ISAAC SANSOM, JR.