

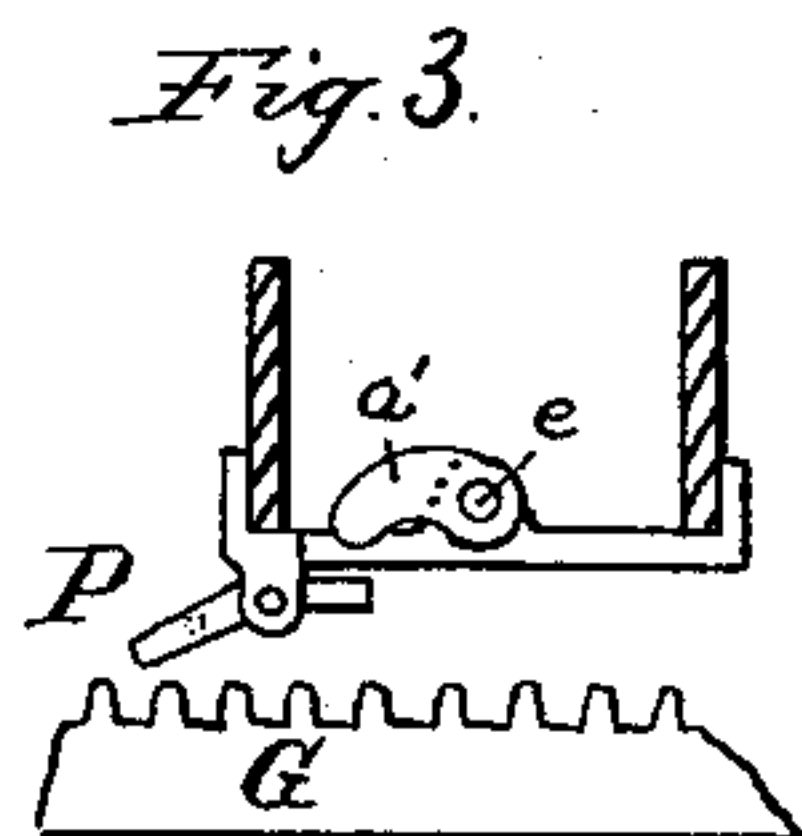
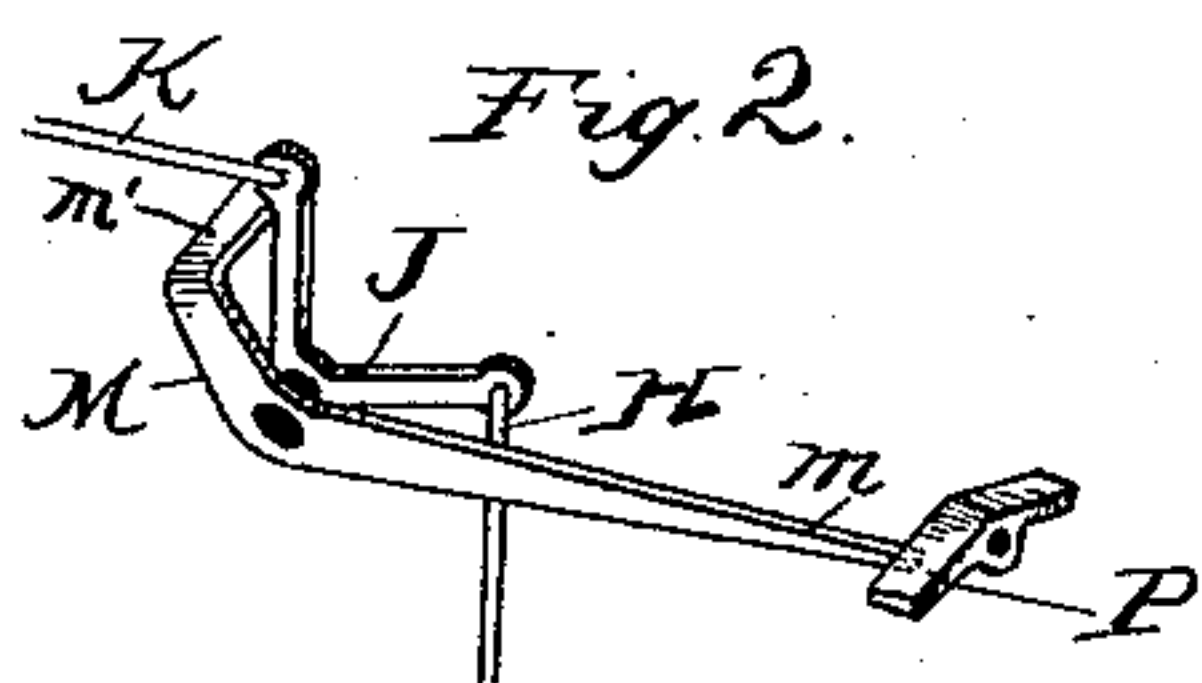
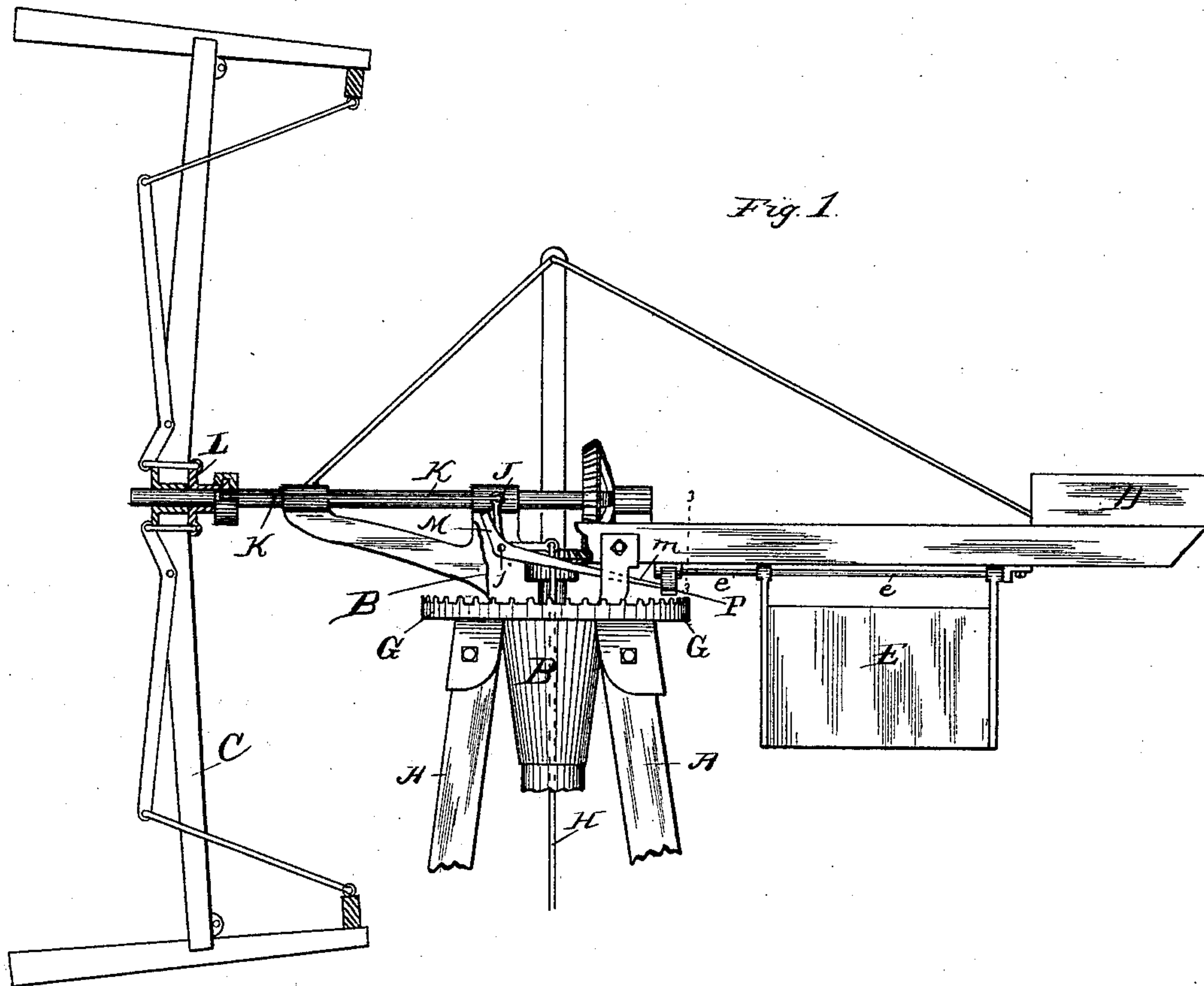
(No Model.)

T. C. ALBEE.

WINDMILL.

No. 349,197.

Patented Sept. 14, 1886.



Witnesses:

Lew. E. Curtis.

A. W. Munday

Inventor:

Truman C. Albee:

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UNITED STATES PATENT OFFICE.

TRUMAN C. ALBEE, OF CHICAGO, ASSIGNOR TO HIMSELF AND EDSON P. ALBEE, OF LOMBARD, ILLINOIS.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 349,197, dated September 14, 1886.

Application filed April 3, 1886. Serial No. 197,657. (No model.)

To all whom it may concern:

Be it known that I, TRUMAN C. ALBEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Windmills, of which the following is a specification.

It is well known that in geared windmills there is a tendency of the wheel to work out or edgewise to the wind, caused by the tendency of the gear-wheel on the horizontal shaft to climb around the gear-wheel on the vertical shaft. To overcome this "side draft," as it is called, it has been customary to provide the head of the tower with a circular rack, which is engaged by a pawl from the mill-carriage, operated by a swinging vane, which pawl locks the mill-carriage from turning, except there be a change of wind, to operate the swinging vane and unlatch the pawl. Practical experience has developed the serious defect in this apparatus. When the mill is stopped for the night, either by tilting the vanes or by the dying down of the wind, it remains locked, of course, and should the wind die down after blowing, say, from the north, and in the morning come up again from the opposite direction, it cannot operate the swinging-pawl vane, because it blows edge on to it, and consequently it is found impossible to start the mill without climbing up to the top of the tower and disengaging the pawl—a matter sometimes attended with considerable danger, owing to the swinging of the carriage when suddenly released, and always a troublesome thing. By this invention I seek to overcome this defect; and the invention consists in so connecting the pawl with the means for tilting the sails of the wind-wheel in and out of action, that when the said sails are thrown out of action the pawl is thereby lifted clear of the rack and maintained out of engagement.

In the accompanying drawings, which form a part of this application, and in which similar letters of reference indicate like parts, Figure 1 is a side view of a windmill containing my improvement. Fig. 2 is a perspective view of the pawl and other parts detached. Fig. 3 is an enlarged section on the line 3 3 of Fig. 1.

In said drawings, A represents the tower of the mill; B, the revolving carriage; C, the wind-wheel; D, the counterbalance-weight; E, the swinging vane secured to and operating to oscillate its shaft *e* and a finger, *a'*, which in turn raises the pawl P from engagement with the circular rack G, mounted on the top of the tower. All of these parts are or may be of the ordinary and usual construction. A vertical rod, H, extending from the top of the tower down to within reach of the bottom, is connected at the top to one arm of a bell-crank lever, J, the other arm of which is connected to the sliding spider L by a rod, K. This sliding spider is connected to the sails of the wind-wheel, and, as will be understood from the drawings, when the rod H is pushed upward the sails of the wheel are thrown out of action, as in Fig. 1, and when the rod H is pulled downward the sails are thrown into action, all of which operation and construction is to be found in mills already well known.

Mounted upon the same pivot *j* as the bell-crank lever J, I provide a lever, M, the long arm of which, *m*, is connected loosely to the pawl P, while the shorter arm, *m'*, is bent to rest under the rod K, so that when the rod H is pushed upward, in throwing the sails of the wheel out of action, the movement of the bell-crank lever will in the latter part of its motion cause the rod K or the head of the lever to engage said short arm *m'*, and thus, by raising the long arm *m*, tilt the pawl P out of engagement with the rack, and hold it thus so long as the sails of the wheel remain out of engagement.

Although I prefer the construction just described, it is obvious that the rod H may be otherwise connected to the pawl—as, for instance, a rigid arm may be extended from the pawl over to the rod H, and a finger or stop may be secured to the rod H at such a point that when the rod is raised a certain distance it will engage the arm and lift the pawl; and some of the advantages of my invention may likewise be attained by connecting the pawl P loosely or flexibly to an independent or additional rod other than the rod H, and extending to within reach of the ground.

I claim—

The combination, with the bell-crank lever J, connected at one end to the sails of the mill and at the other end to a rod reaching down toward the ground, of the lever M, operated by said first-named lever and the loose pawl P and its actuating-vane E, whereby the same operation which throws the sails out of the wind will simultaneously unlatch the pawl and leave the mill free to swing on the tower, substantially as specified.

TRUMAN C. ALBEE.

Witnesses:

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