(No Model.)

D. H. BAUSMAN.

WIND ENGINE.

No. 299,325. Patented May 27, 1884.

Fig. 1.

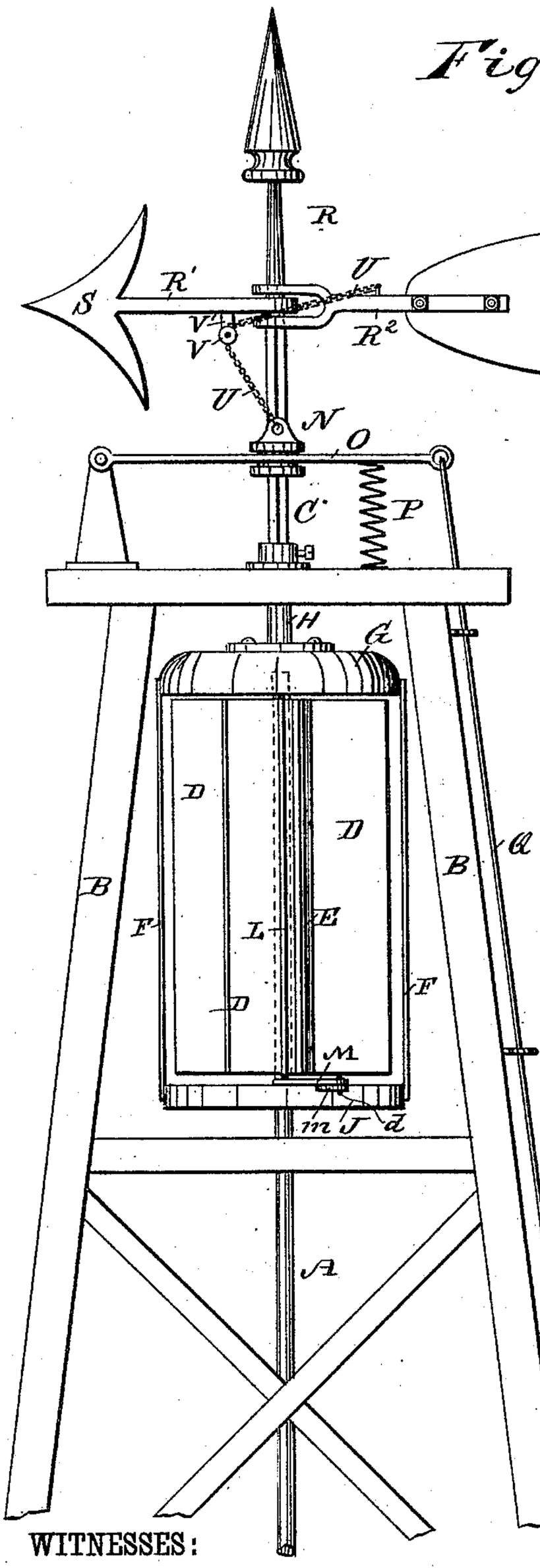


Fig. 2.

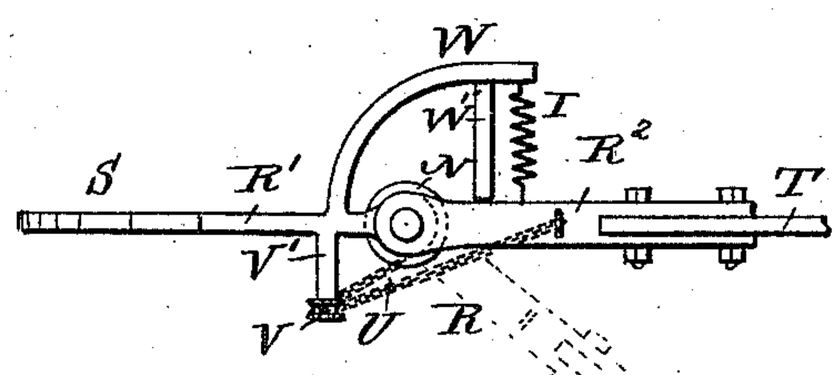
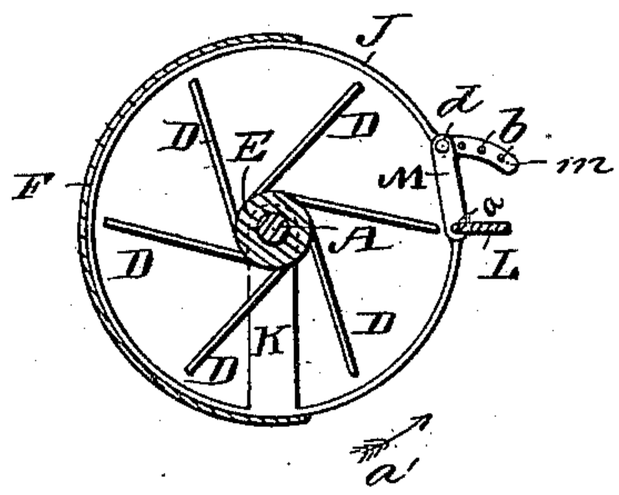


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAVID H. BAUSMAN, OF LANCASTER, PENNSYLVANIA.

WIND-ENGINE.

SPECIFICATION forming part of Letters Patent No. 299,325, dated May 27, 1884.

Application filed July 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. BAUSMAN, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented a new and Improved Wind-Engine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved wind-engine or wind-motor which is of simple construction and regulates itself automatically and adjusts itself according to the direction from which the wind blows.

The invention consists in the construction, arrangement, and combination of parts, as will be hereinafter fully described, and specifically set forth in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved engine. Fig. 2 is a plan view of the mechanism for regulating the speed. Fig. 3 is a sectional plan view of the vertical wind-wheel.

A vertical shaft, A, is journaled in the upright frame B, and on the said shaft a tubular hub, E, is rigidly mounted, on which a series of wings, D, are fastened radially. A semi-cylindrical shield, F, is fastened on its upper end to a horizontal disk, G, mounted rigidly on the lower end of a tubular shaft, H, journaled in the top plate of the frame B. The upper end of the shaft A is journaled in the disk G. A shaft, C, which is squared or provided with a spline, is secured in the upper end of the tubular shaft H, supported on the frame B by a collar. The lower end of the shield F is fastened to a ring, J, fastened to an arm, K, loosely mounted on the shaft A below the wings D. A wing, L, is provided at the top and bottom with pivots *a*, journaled in the ring J and in disk G. On the lower pivot, *a*, an arm, M, is fastened. A curved arm, *m*, projects from the ring J, and is provided with a series of apertures, *b*, through which and an aperture in the end of the arm M a pintle, *d*, can be passed for adjusting the wing L, as may be desired, in a manner that will be fully set forth hereinafter.

A flanged sleeve, N, is mounted to slide vertically on the squared part C of the shaft H, and the said sleeve is held to turn on its vertical axis in a lever, O, pivoted to the upper end of a standard on the top plate of the frame B. A spring, P, or analogous device presses or draws the free end of the lever upward. A wire rod or chain, Q, is fastened to the free end of the lever and passes through suitable guides on the frame.

The vane R is composed of two parts, R′ and R^2, of which the former is fixed on the shaft C, and is provided with a front plate, S. The part R^2 is forked and pivoted on the shaft C, and is provided with a vane-plate, T. A chain or wire, U, is secured on the part R^2, a short distance from the pivoted end, and passes over a pulley, V, on the arm V′ of the part R′, and is then fastened to the sleeve N. The part R′ of the vane is provided with a curved arm, W, which extends beyond the shaft, and to the end of the said arm a spiral spring, I, is fastened, the other end of which is fastened to the part R^2 of the vane and draws the same in the direction toward the free end of the arm W, which has a check, W′, for the vane.

The operation is as follows: The vane R is so arranged that it always turns the shield F in such a manner that the wind can pass between the edges of the shield and the wing or regulator L, and can thus strike the wings D with full force, and thus all power of the wind will be utilized. The vane turns the shield independently of the wheel. If it is desired to utilize less than the full power of the wind, the shield must be so adjusted that it faces the wind more or less, and thus shuts off the wind from the wheel. This is accomplished by pulling on the wire or rod Q, for thereby the free end of the lever O is drawn downward. The sleeve N and the chain U are drawn downward, and the part R^2 of the vane is drawn in the direction from the end of the arm W—that is, the vane will be angular, and will thus turn the shield in another position than when the vane is straight, the direction of the wind remaining the same. The shield can thus be adjusted to admit more or less wind to the wheel. As soon as the rod or wire Q is released, the spring P throws the lever O upward, and the spring I draws the part R^2 back to the straight position again. If a sudden

strong gust of wind strikes the wheel, it also strikes the wing or regulator L, and thereby throws the shield F around in the direction of the arrow *a'*, and thus shuts off the wind from the wheel.

By means of the arm M, the arm *m*, having the perforations *b*, and the pin *d*, the wing L can be adjusted to present a greater or less surface to the wind.

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

1. The combination, in a wind-engine, of the shaft A, carrying the horizontal wheel D E, with the shield F, secured to the disk G and ring J, the said disk G being supported by the shaft H and its collar, and provided on its under side with a bearing for the upper end of the shaft A.

2. In a wind-engine, the combination, with a horizontal wind-wheel, of an independent semi-cylindrical shield partly surrounding it, and of an adjustable regulator-wing pivoted in the frame of the shield and opposite the shield proper, substantially as shown and described.

3. In a wind-engine, the combination, with a horizontal wind-wheel, of the shield F, partly surrounding it, the disk G, the ring J, and the vertical adjustable wing L, pivoted in the ring J and in the disk G, substantially as herein shown and described.

4. In a wind-engine, the combination, with a horizontal wind-wheel, of a semi-cylindrical shield, F, partly surrounding it, the disk G, the ring J, the vertical wing L, the arm M, the arm *m*, provided with apertures *b*, and of the pin *d*, substantially as herein shown and described.

5. In a wind-engine, the combination, with a horizontal wind-wheel, of an independent shield partly surrounding it, a vane connected with the shield and provided with a joint between the ends, and of devices for giving the two parts of the vane the desired inclination to each other, substantially as herein shown and described.

6. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield partly surrounding it, of the shaft C, connected with the shield, a jointed vane, R, on the shaft C, the lever O, and the chain U, fastened to the vane-section R^2 and to the lever O, and passing over a pulley, V, on the vane-section R', substantially as herein shown and described.

7. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield partly surrounding it, of the shaft C, the jointed vane R, the lever O, the spring P, the rod or wire Q, the sleeve N, and the chain U, secured to the sleeve N and to the vane-section R^2, and passing over a pulley on the vane-section R', substantially as herein shown and described.

8. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield, of the shaft C, the jointed vane R, the spring I, fastened to the vane part R^2 and the arm W of the part R', and of devices for inclining the vane part R^2 to the vane part R', substantially as herein shown and described.

DAVID H. BAUSMAN.

Witnesses:
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