J. N. RUNDLE.

WIND-MILL.

No. 181,598. Patented Aug. 29, 1876.

Fig. 1.

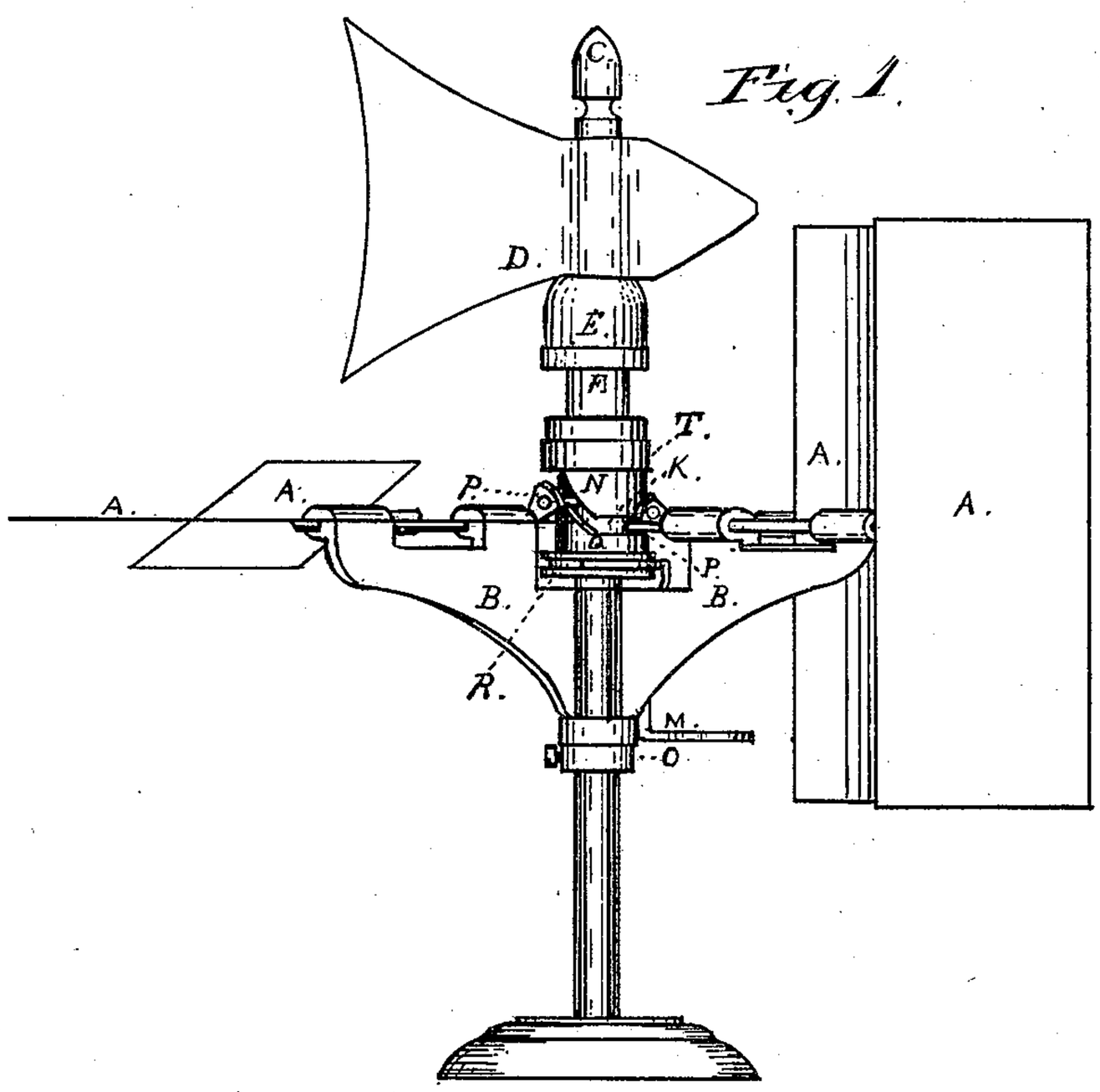
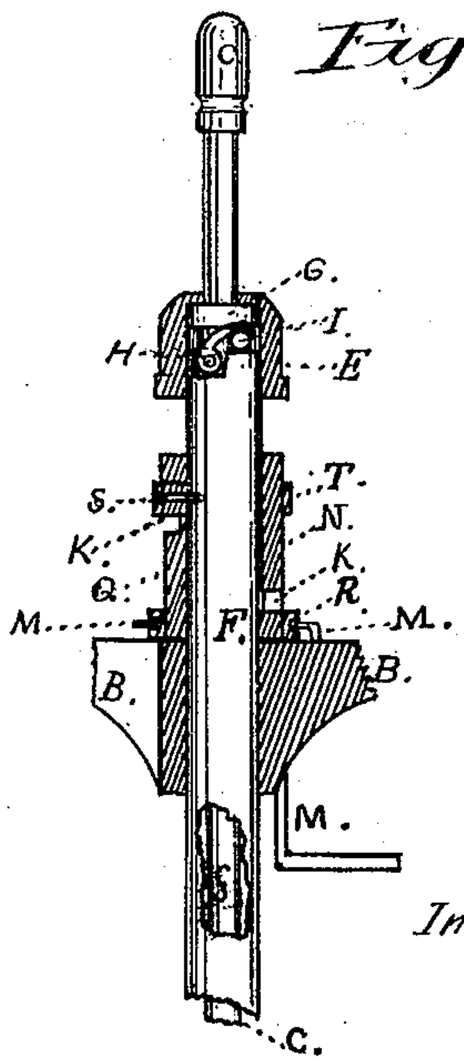


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES N. RUNDLE, OF VISALIA, ASSIGNOR TO HIMSELF AND DAVID L. FONSECA, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN WINDMILLS.

Specification forming part of Letters Patent No. **181,598**, dated August 29, 1876; application filed July 22, 1876.

To all whom it may concern:

Be it known that I, JAMES NELSON RUNDLE, of Visalia, in the county of Tulare and the State of California, have invented certain new and useful Improvements in Windmills, of which the following is a specification, reference being had to the accompanying drawing and the letters marked thereon.

Figure 1 is a perspective elevation; and Fig. 2 is a sectional view, showing the construction and general arrangement of the same.

A represents the wings or sails of the windmill; B, the frame which carries the sails as they are revolved. C represents the central or pivot post, upon which the whole revolves. D represents the vane to adjust the mill to the wind. E represents the friction-brake cap. F represents the main sleeve; G, the friction-brake shoulder; H, the friction-brake shoe; I, the friction-brake roll. T represents the outer sleeve band or guide, to hold and guide upper section of cam N Q. It is attached to the sleeve F. K, the groove of the directing-cam, which adjusts the wings to the wind. L represents the lever to operate the grooved guide-band. N represents the upper or sliding part of the cam. Q represents the lower or fixed part of the cam, which adjusts the wings to correspond with the action of the vane D. The cams or pins P operate in the groove K. O represents the adjustable shoulder, to form the lower bearing of the mill-frame B. R is the lower guide-band.

The following is the operation of the same: The wings A being revolved by the action of the wind, the vane D being attached to the inner or main sleeve F by means of a set-screw or other attachment to enter the socket in the friction-brake shoe H, so as to place the cam N Q in relative position with the vane D, (shown in Fig. 1,) the lower side of the groove K being at the right, and the higher side at the left, when facing the mill from the leeward side, the cams or pins P, operating in the groove K as the wings revolve, adjust the same to the wind, holding the wings in a horizontal position until the windward side is reached, when the pins P, passing down into the lower side of the grooves K, cause the wings to assume a vertical position, which they retain, to catch the force of the wind, until reaching the leeward side, when the pin P passes into the higher part of the groove, again causing the wings to maintain a horizontal position, &c.

It will be readily understood that while the wings are in a horizontal position they afford but slight resistance to the wind, thus allowing the mill to be revolved by the action of the wind against the wings, which are then in a vertical position, and so as to catch the force of the same.

The wings are all thrown in a horizontal position, and the action of the wing neutralized, by operating the sliding lever L and raising the grooved guide-band Q, which carries with it the upper part of the cam, which is marked N, until the upper line of the guide-band is even with the top of the lower part of the cam, which is marked N, thus leaving a complete horizontal groove around the whole, between the guide-bands T and R, and holding the wings in a horizontal position.

The operation of the friction-cam G, H, and I is as follows: The wind, acting upon the vane D, which is attached to the friction-brake cap E, carries the cam around, so that the wings which are standing in a vertical position are always moved to the right, or with the sun. As soon as the wind shifts but slightly, so as to move the vane, the roll I is moved back upon the incline of the shoe H, and the brake is freed, so that the sleeve is freely moved around until the cam is adjusted to the wind.

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

1. The sails A and cams or pins P, in combination with the groove K, when adjusted by the lever M, in the manner and for the purposes set forth.

2. The friction-brake, composed of the cap E, the shoulder G, the shoe H, and the roll I, when operated by means of the vane D, substantially as set forth.

3. The adjustable cam N Q, operated in combination with and by means of the bands T and R and the shifting-lever M, as set forth.

JAS. N. RUNDLE.

Witnesses:

JOHN H. REDSTONE,

T. A. REDSTONE.