

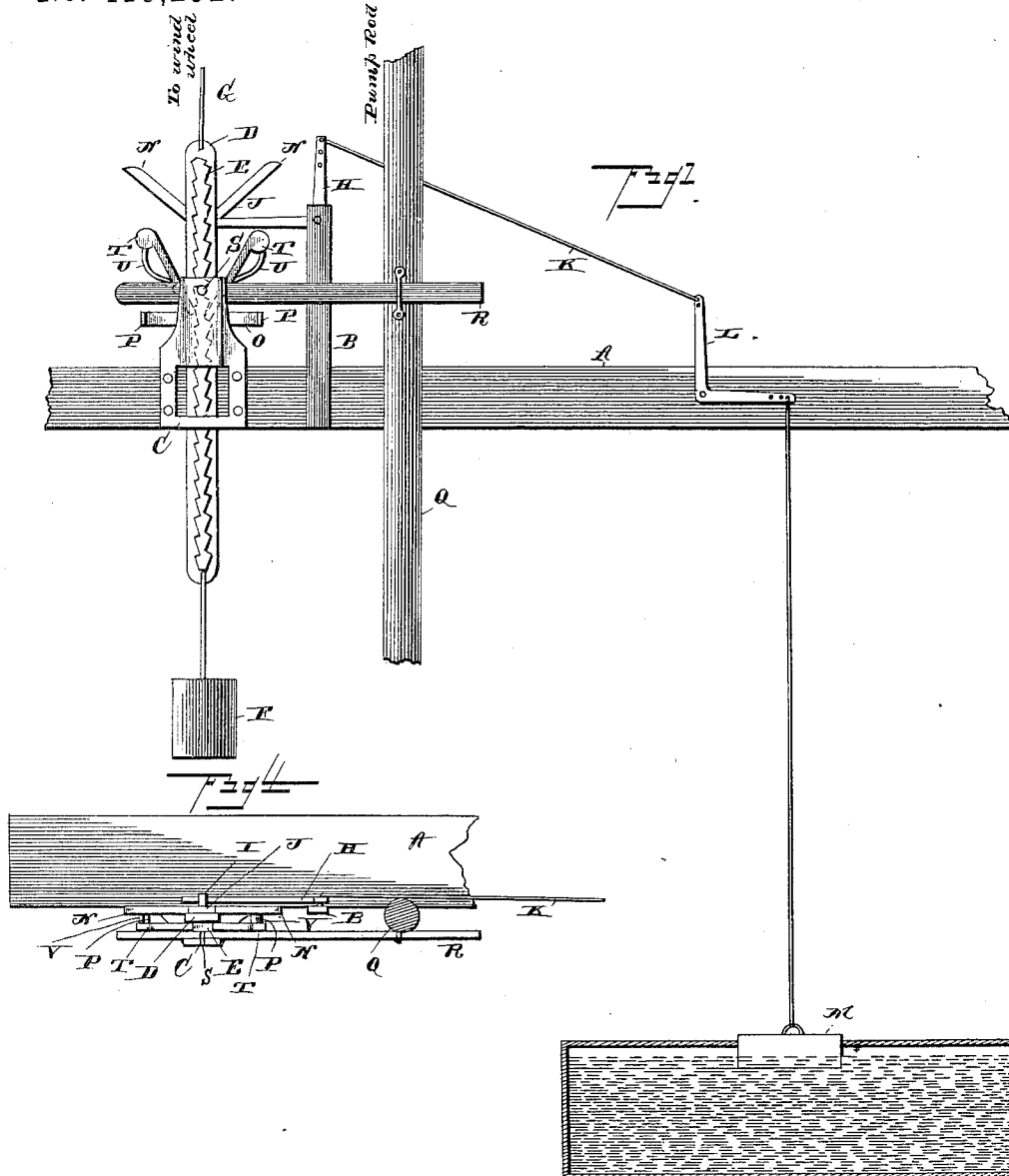
(No Model.)

2 Sheets—Sheet 1.

W. H. VAN SCHAICK.
WINDMILL REGULATING DEVICE.

No. 419,232.

Patented Jan. 14, 1890.



Witnesses

John Smirie
R. H. Bishop,

By his Attorneys,

Inventor

William H. Van Schaick

C. A. Snow & Co.

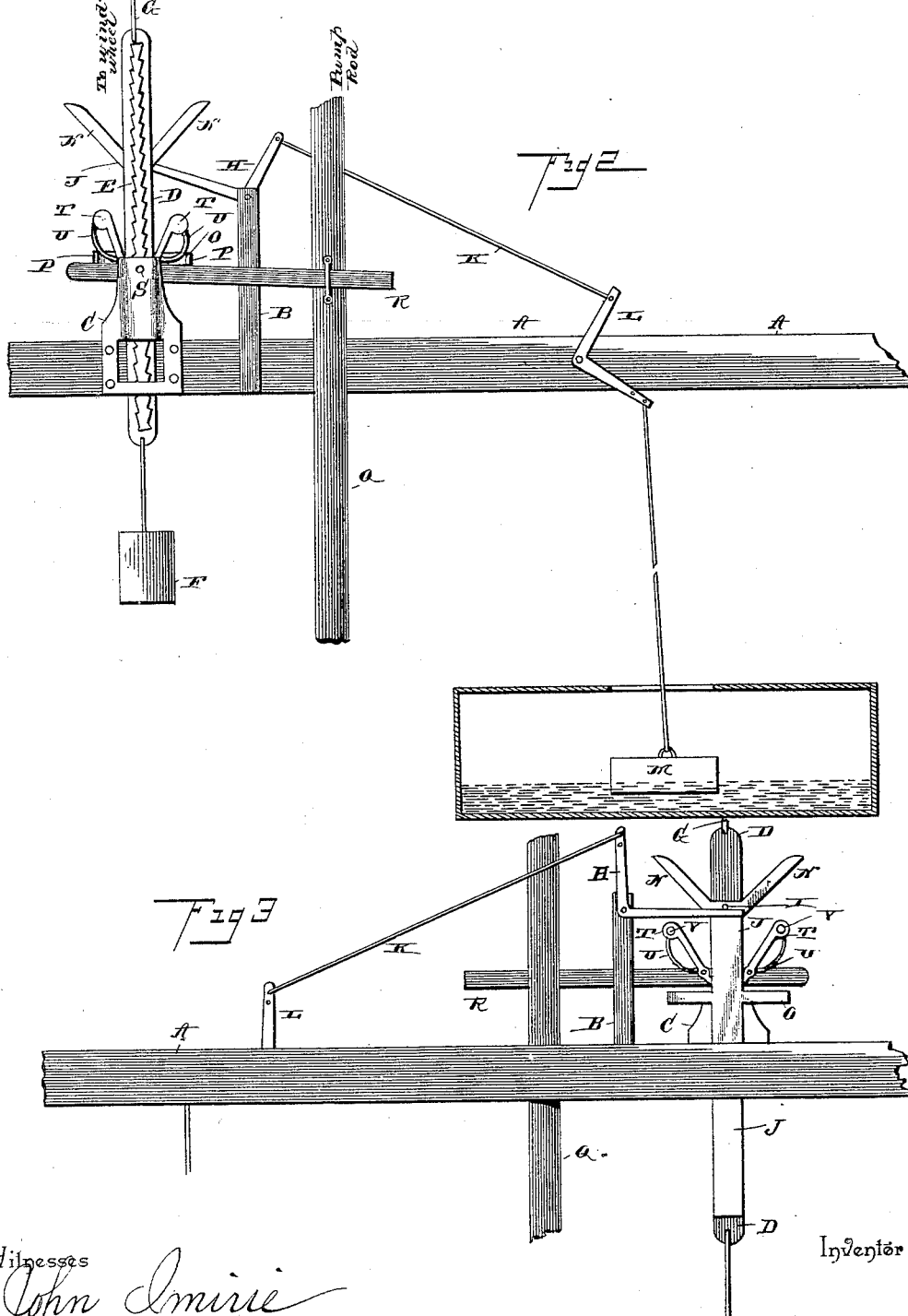
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UNITED STATES PATENT OFFICE.

WILLIAM H. VAN SCHAIK, OF WALWORTH, WISCONSIN.

WINDMILL-REGULATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 419,232, dated January 14, 1890.

Application filed August 21, 1889. Serial No. 321,484. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. VAN SCHAIK, a citizen of the United States, residing at Walworth, in the county of Walworth and State of Wisconsin, have invented a new and useful Windmill-Regulating Device, of which the following is a specification.

My invention relates to improvements in windmill-regulating devices; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of my improved device. Fig. 2 is a similar view showing the parts in a different position. Fig. 3 is a view looking at the opposite side of the device. Fig. 4 is a detail plan view.

Referring to the drawings by letter, A designates a cross-beam of the windmill-tower, and B is a standard erected thereon near the drive-rod, as shown. On the beam A, adjacent to the standard B, I secure a guide-plate C, in which a slide D, having notches E in its opposite side edges, is mounted, and through which the said slide moves. This slide has a weight F secured to its lower end, and its upper end is connected by a cord G with the wind-wheel, and I call it the "regulator-slide."

On the upper end of the standard B, I fulcrum an angle-lever H, one end of which projects under a stud I on the slide J, and the other end of which is connected by a rod K with a similar angle-lever L, fulcrumed on the beam A, and the said angle-lever L is connected with a float M in the tank.

The slide J is supported by and moves through the guide-plate C in rear of the slide D, and it is provided at its upper end with the outwardly and upwardly projecting arms N, which are adapted to act on the pawls hereinafter referred to. Below its upper end this slide J, which I call the "tripping-slide," is provided with a cross-head O, the ends of which are bent forward horizontally, as shown at P, and these bent ends are also adapted to act on the pawls.

The pump-rod Q is of the usual construction, and a lever R is secured thereto at one end and has its other end secured to the

guide-plate C by a pivot-pin S, as shown. This lever carries the pawls T, which are adapted to engage the notches E on the opposite edges of the slide D, and are thrown normally into engagement with said notches by their own weight. These pawls are provided with the studs V, and are connected by a wire U to prevent them swinging too far from the rack-bar.

When the tripping-slide J is raised, the ends of the cross-head O are brought into contact with the wire U, thereby forcing the upper ends of the pawls together and releasing the lower ends of the same from the notches. When the slide is lowered, the arms N will come into contact with the studs V on the pawls, and will exert a wedging action thereon to force the upper ends of the pawls apart, and consequently swing the lower ends of the same together and into engagement with the notches in the regulator-slide D.

When the tank is being filled, the float M rises with the water, thereby allowing the angle-levers to move, so as to permit the tripping-slide J to fall, thereby throwing the pawls T into engagement with the notched slide E. As the lever R is reciprocated by the pump-rod, the pawls will be alternately made to engage higher notches E in the regulator-slide D, and so force the said slide downward. The rod or cord G will thus be drawn downward and made to pull the wheel out of the wind. As the water is used from the tank the float will fall, and thereby draw on the angle-levers, so as to raise the tripping-slide J, and consequently bring the cross-head O into contact with the pawls, and thereby disengage them from the notched slide E. The wheel will then automatically turn to the wind, and raising the regulator-slide D and weight F, the machine will be operated to again fill the tank.

The weight on the lower end of the regulator-slide serves to maintain the proper tension on the rod or cord G. All windmills are so arranged that a certain amount of wind force will blow the wheel around out of gear; but the machines heretofore devised, so far as I am aware, will all bear too much wind force before being thrown out of gear, so that they will run too fast, and are consequently liable

to break some of the parts by jerking. The weight which I employ lessens the force necessary to throw the wheel out of gear, so that by using a lighter or heavier weight the speed of the windmill can be regulated as may be desired. This weight furthermore relieves the strain on the pawls by increasing the effect of the force of gravity on the regulator-slide, and so accelerating the downward movement of the same.

My improved device is composed of few parts, which are simple in their construction, and its advantages are thought to be obvious.

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

1. The combination of the beam A, the standard B, erected thereon, the guide-plate secured on the beam adjacent to the standard B, the notched regulator-slide moving through said guide-plate, the lever pivoted to the guide-plate and carrying pawls engaging the notched slide, the pump-rod actuating said lever, the angle-lever H on the standard, intermediate devices, substantially as described, connecting said lever with the slide, the angle-lever I on the beam A, connected with the lever H, and the float connected with the lever L, as set forth.

2. The combination of the notched regulator-slide, the lever operated by the pump-rod, the pawls carried by said lever and adapted to engage the said slide, the tripping-slide arranged in rear of the regulator-slide and adapted to act on the said pawls, and mechanism, substantially as described, for operating said tripping-slide, as set forth.

3. The combination of the notched regulator-slide, the lever operated by the pump-rod, the pawls provided with the studs V, carried by said lever and adapted to engage the regulator-slide, the tripping-slide J, having

the inclined arms N, adapted to bear on said studs, and the cross-head O, adapted to come into contact with the pawls, and mechanism, substantially as described, for operating the tripping-slide J, as set forth.

4. The notched regulator-slide D, connected by a cord or chain with the wind-wheel to throw it out of the wind, and provided with a weight F, combined with the pump-rod Q, the lever R, operated by direct connection with the pump-rod, the pawls T, carried by the lever R, to engage the notches of the slide, the tripping-slide J, adapted to release and set the pawls, and the tripping mechanism, substantially as described, operated by a float to set the tripping-slide in operation, as set forth.

5. The guide-plate C, the notched regulator-slide D, moving through the guide-plate and connected by a cord or chain with the wind-wheel to throw it out of the wind, and provided with a weight F, combined with the reciprocating pump rod or plunger Q of the wind-wheel, the lever R, connected to the pump-rod to receive motion therefrom and pivoted on the guide-plate C, the pawls T, carried by the lever R, the tripping-slide J, also sliding through the guide-plate, and provided with a cross-head O, to release the pawls, and arms N, to force them into engagement with the regulator-slide, the bell-crank lever H, operating on the tripping-slide, the float, and intermediate devices connecting the same to the lever H, substantially as described and set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM H. VAN SCHAICK.

Witnesses:

JOHN B. STUFFELL,
WM. P. ALLEN.