

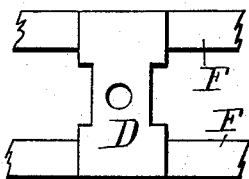
(No Model.)

D. B. NETTZ.  
PUMP ROD FOR WINDMILLS

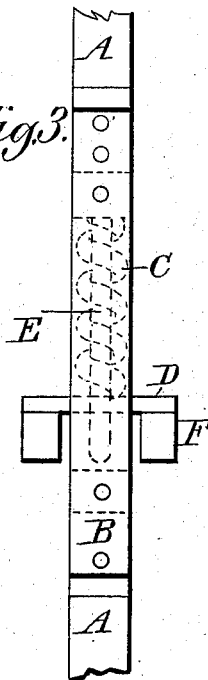
No. 384,998.

Patented June 26, 1888.

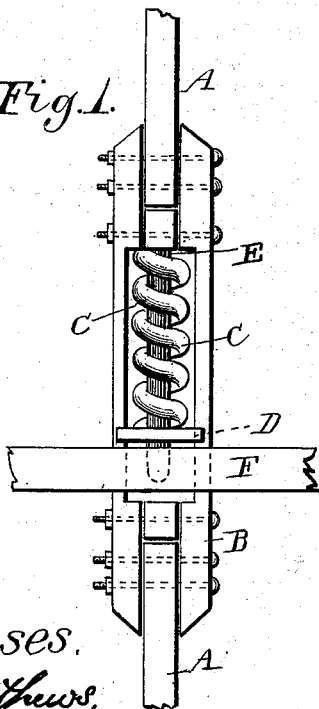
*Fig. 4.*



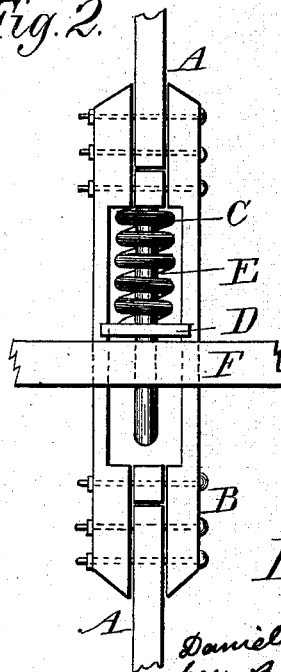
*Fig. 3.*



*Fig. 1.*



*Fig. 2.*



Witnesses.  
Jos. Matthews.  
Rollin Olson.

Inventor,

Daniel B. Nettz.  
per B. S. Kark  
Attorney.

# UNITED STATES PATENT OFFICE.

DANIEL B. NETTZ, OF JEFFERSON, GREEN COUNTY, WISCONSIN.

## PUMP-ROD FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 384,998, dated June 26, 1888.

Application filed July 19, 1887. Serial No. 244,779. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL B. NETTZ, a citizen of the United States, residing at the township of Jefferson, in the county of Green and State of Wisconsin, have invented new and useful Improvements in Pump-Rods for Windmills, of which the following is a specification.

My invention relates to improvements in said rod, whereby the power or force of wind necessary to run the windmill is lessened by an open spiral spring sufficient in strength to sustain, or as nearly so as possible, the column of water being pumped by the windmill, said spring being at one end fixed to the pump-rod or rod connecting the pump with the crank of the windmill, and fixed to or resting at the other end upon a fixed base, the end of the spring fixed to the pump-rod having a vertical reciprocal motion with the pump rod, thereby securing an equilibrium between the weight of the column of water and the supporting strength of the spiral spring that will require but little force from the windmill to disturb in producing the vertical reciprocal motion of the pump-rod necessary to run the pump. It will be observed that the same results may be obtained by employing a closed spring and simply inverting the same, placing the base above instead of below, the principle involved being the same. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front vertical view of the machine or invention as it appears when the spring is distended to the highest altitude of the vertical reciprocal movement of the pump-rod. Fig. 2 is the same with the spring depressed to the lowest point of the vertical reciprocal movement of the pump-rod. Fig. 3 is a vertical side view of the invention or machine. Fig. 4 is a top view of the fixed base for the spring to be attached to or rest upon.

A A are portions or sections of the pump-rod. They are connected by the two parallel cheek-pieces B B, between the ends of which the ends or sections of the pump-rod are securely fastened.

C is a vertical spiral spring the lower end of which is fixed to or rests upon the fixed base D, and the upper end is fixed to or rests against the shoulder of the tongue E, which tongue is also at its upper end securely fastened between the cheek-pieces B B, and the lower part of which has a vertical reciprocal movement through a hole in the center of base D. The object of the tongue E is to keep in place the spring C. The base D rests upon and is securely attached to beams F F, which beams are securely fastened to the sides of the pump-tower.

The upper end of the pump-rod is attached to the crank of the windmill. The lower end of the pump-rod is attached to the pump. Base D is provided on both sides with slots, through which the cheek-pieces B B have a vertical reciprocal motion. The object of the cheek-pieces is to maintain the pump-rod in proper position relative to the spiral spring and connect the ends of the sections of the pump-rod.

I claim as my invention—

The sectional pump-rod A A, connected by the parallel cheek-pieces B B, the tongue E, secured between the cheek-pieces, and the spring C, surrounding the tongue E, in combination with the beams F F, and the plate D, supported thereon and adapted to guide the cheek-pieces at each side to receive the tongue through a hole in the center, and to support the spring C, substantially as described.

DANIEL B. NETTZ.

Witnesses:

JOS. MATHEWS,  
F. M. CONFER.