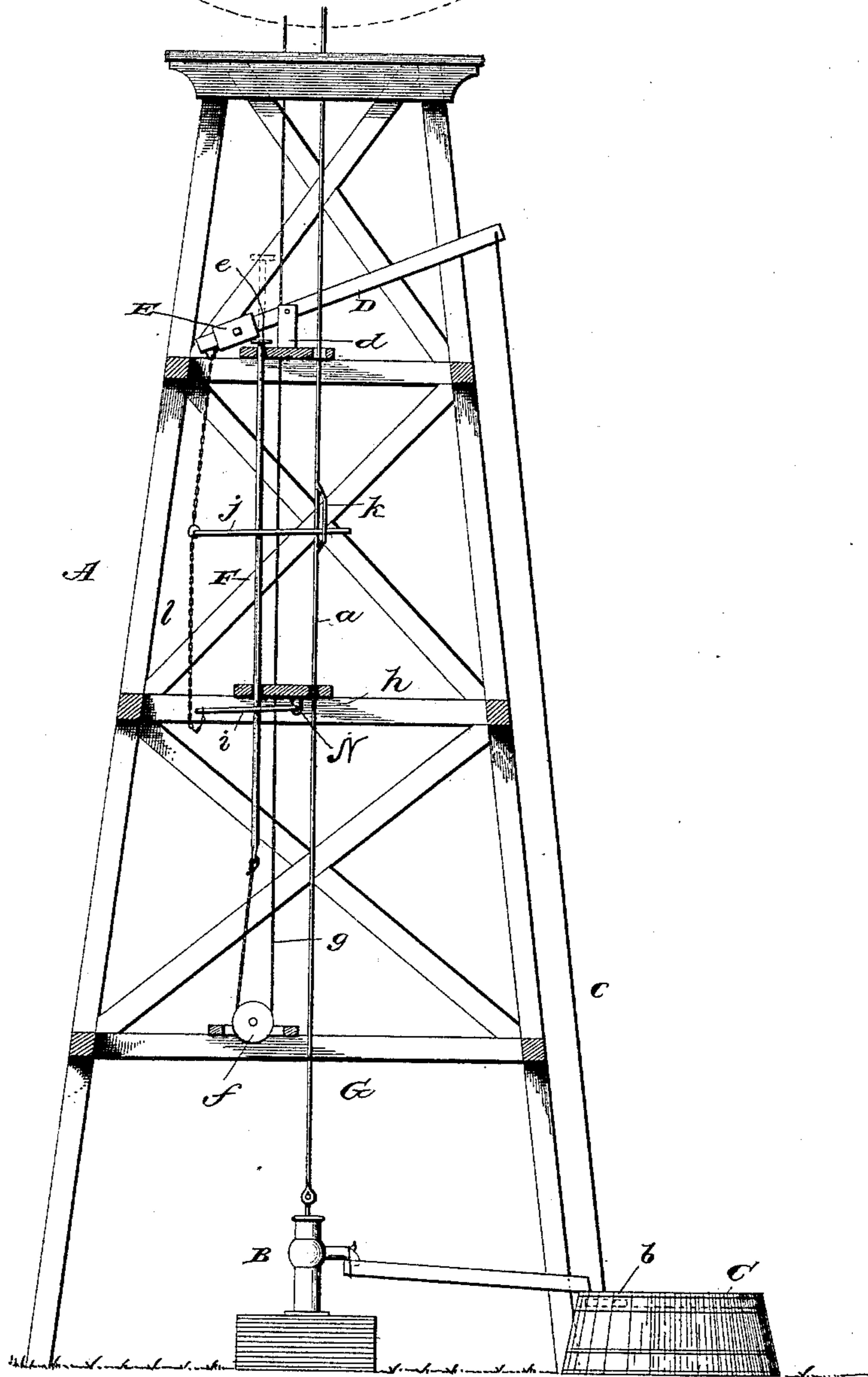


(No Model.)

C. F. NEEDHAM.
ATTACHMENT FOR WINDMILLS.

No. 424,812.

Patented Apr. 1, 1890.



Charles F. Needham.
Inventor

Witnesses

G. S. Ellgitt.
E. W. Johnson

By his Attorneys

[Signature]

UNITED STATES PATENT OFFICE.

CHARLES F. NEEDHAM, OF TAMPICO, ILLINOIS.

ATTACHMENT FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 424,812, dated April 1, 1890.

Application filed June 27, 1889. Serial No. 315,729. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. NEEDHAM, a citizen of the United States of America, residing at Tampico, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Attachments for Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which form a part of this specification.

This invention has reference to attachments for windmills; and it consists in the improved arrangement hereinafter described and set forth, whereby a simple attachment is provided that can be readily and inexpensively applied to automatically control the position of the wheel with relation to the wind.

In the accompanying drawing, forming part of this specification, the figure represents in elevation a windmill having my improvement applied thereto.

Suitably guided in the stand or support A is the vertical rod *a*, adapted to be reciprocated in the usual manner by the wheel to actuate the piston of the pump B to supply water to the tank C. Within the latter is a float *b*, (shown by dotted lines,) to which float is connected the lower end of a vertical rod *c*, the upper end of which is pivotally connected to the longer end of a lever D, horizontally pivoted on a short vertical standard *d*, located in the upper part of the supporting-frame. The shorter end of said lever is provided with a weight E, which counterbalances the weight represented by the longer end of said lever and the rod *c*, depending therefrom. A rod F, also positioned in suitable guides in the supporting-frame, is provided at its upper end with a head *e*, which prevents it from dropping out of its said guides. On one of the lower cross-bars G of the supporting-frame is mounted a pulley *f*, around which passes a cord or cable *g*, connected to the lower end of the rod F, and extending up and connected to the wheel in a manner that will enable it to turn the wheel with its edge to the wind when traction is exerted upon said cord or cable.

Depending from the under side of one of the guides is a staple N, to which is pivotally connected one end of a short metallic arm *i*, which is centrally perforated for the passage of the rod F. A similar arm *j* is arranged above the arm *i*, and is also perforated for the passage of the rod F. The inner end of said arm *j* extends into a loop *k* therefor in the rod *a*, while its other end is connected by a chain *l* to the free end of the arm *i* and to the weighted end of the lever. The disposition of the parts is such that when the float *b* rises in the tank, occasioned by the latter becoming filled to the requisite amount through the agency of the windmill and pump, the rod *c* will be elevated to raise the longer end of the lever D, and consequently depress the weighted end of the same. The lowering of said weighted end slackens the chain-connection, as shown, permitting the arms *i j* to each assume an inclined position. While the parts are in this position the reciprocation of the pump-rod raises the inner end of the arm *j*, so that it will bind upon the rod F and raise the same to a limited extent. The descent of the piston-rod of course relieves the bind to enable the arm *j* to slide downward upon the rod F. Each time the arm *j* is raised its connection with the arm *i* causes the latter to assume a position that enables the rod F to slide therethrough; but any tendency of the arm *i* to resume its inclined position results in its biting the rod F to hold it in its position previously secured through the elevation of the other arm. This operation of course continues until the rod F is raised to its limit, as shown in dotted lines, by which time it will have exerted traction upon the cord or cable *g* sufficient to turn the wheel edgewise to the wind and effect a cessation of the pumping operation.

From the foregoing it will be seen that the device is of simple and inexpensive construction, positive and automatic in its operation, and can be applied to existing structures with but very little trouble.

I claim—

The combination, with the stand of a windmill, a pump, and tank arranged at the base thereof, of a pump-rod guided vertically through the stand and provided with a loop, as

described, a vertical rod F, guided in the support, a pulley, cable attached to the vane and passing around said pulley and connected to the lower end of rod F, a counterbalanced lever pivoted in the upper part of the stand, a float in the tank connected to said lever, a lower arm *i*, pivoted at one end to the frame, an upper arm *j*, having one end bearing in the loop of the pump-rod, said arms *i* and *j* being

perforated for the passage of the rod F, as specified, and a chain for connecting said arms to the upper lever, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. NEEDHAM.

Witnesses:

J. F. LEONARD,

GEORGE M. NEEDHAM.