

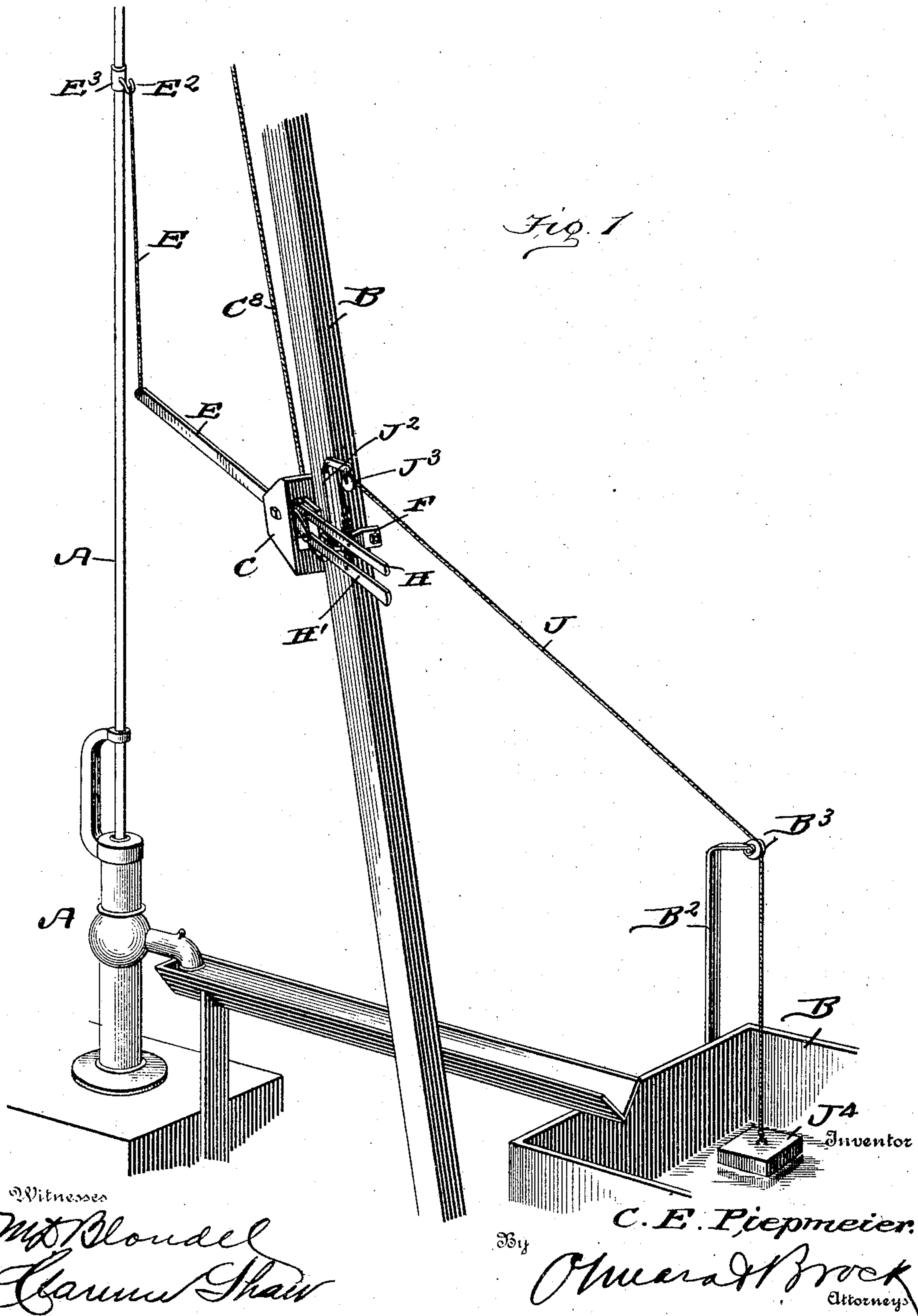
No. 764,627.

PATENTED JULY 12, 1904.

C. E. PIEPMEIER.  
WINDMILL REGULATOR.  
APPLICATION FILED OCT. 28, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



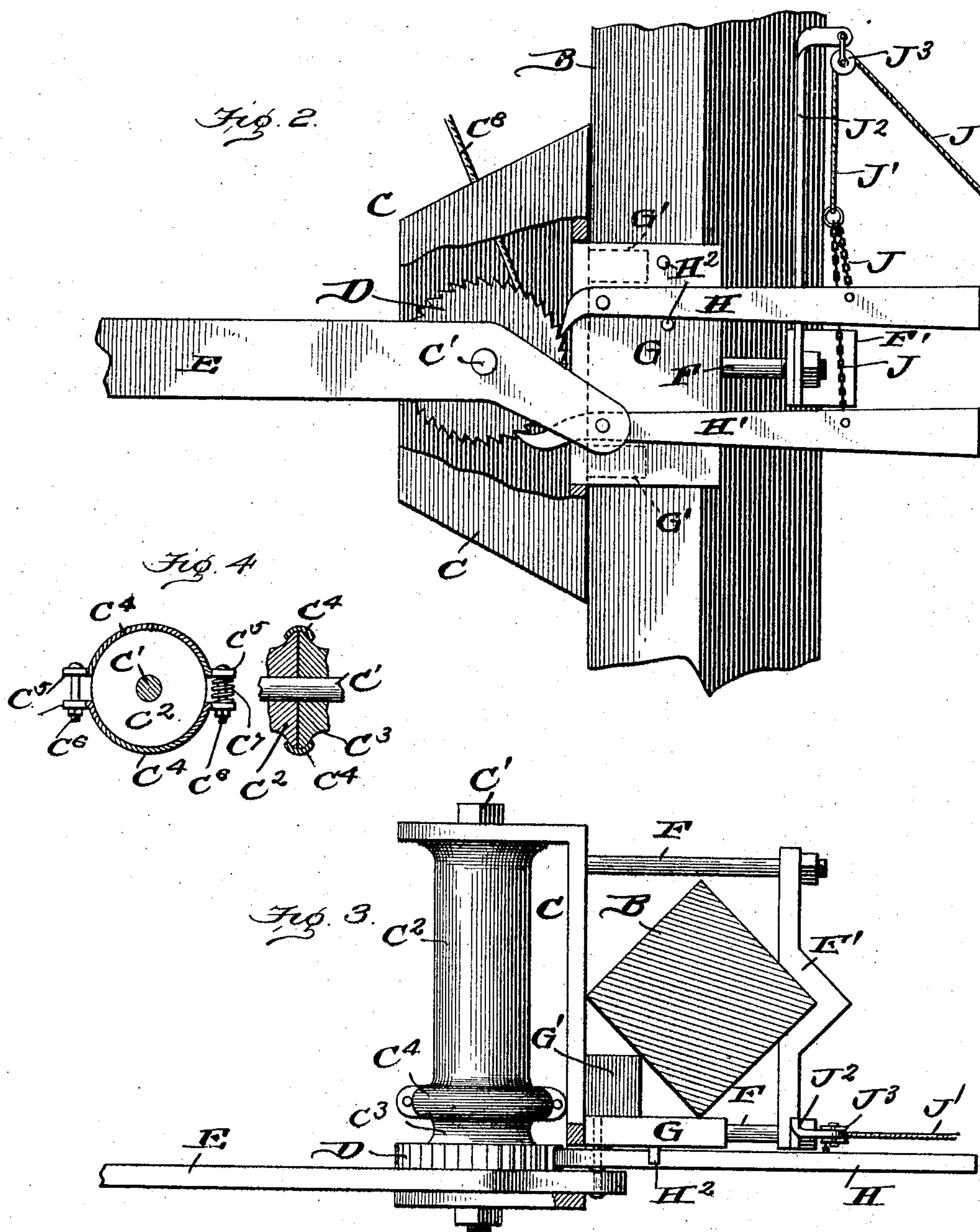
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Inventor

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# UNITED STATES PATENT OFFICE.

CHARLES ENOS PIEPMEIER, OF ROCKVILLE, MISSOURI.

## WINDMILL-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 764,627, dated July 12, 1904.

Application filed October 28, 1903. Serial No. 178,921. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES ENOS PIEPMEIER, a citizen of the United States, residing at Rockville, in the county of Bates, State of Missouri, have invented a new and useful Improvement in Windmill-Regulators, of which the following is a specification.

This invention is an improved attachment for windmills, and is designed to regulate the flow of water in tanks, &c., supplied by a pump operated by a windmill, the device pulling the windmill out of the wind when the tank is full and permitting the wheel to fall into the wind and resume the pumping operation when the supply falls.

My invention consists of the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view showing the practical application of my device. Fig. 2 is a side elevation of my device attached to a tower-post, a side of the casing being broken away. Fig. 3 is a plan view, the post being in section. Fig. 4 is a detail side and a detail sectional view illustrating the clutch mechanism.

In the drawings, A represents a suitable pump having a pump-rod A' actuated by the wheel (not shown) of a windmill of any desired make or construction.

B represents one of the tower-posts supporting the windmill; B', a tank supplied with water by the pump; B<sup>2</sup>, a standard carried by the tank and carrying at its upper end an idle pulley B<sup>3</sup>. A casing C is adapted to be secured to the post B. The casing consists of side and back pieces and is open in the front and at the top. Should it be desired to protect the mechanism from the weather, the casing may be closed at the top, the top being perforated to permit the cable C<sup>8</sup> to run through. Arranged in the casing C is a shaft C', having a sectional drum secured thereon. The drum has a cable-section C<sup>2</sup>, which forms the main portion of the drum, and an adjoining section C<sup>3</sup>. A shoulder is formed at the meeting ends of these two sections, and a clutch

C<sup>4</sup> fits over the shoulders and binds the two sections together. This clutch is formed in two semicircular sections, each concaved to fit over a portion of the shoulder. Ears are formed at the ends of each section, as shown at C<sup>5</sup>, and a suitable bolt and nut C<sup>6</sup> connect the alining ears of the sections, a spring C<sup>7</sup> being coiled around each bolt between the two ears. By tightening the nuts the sections will be drawn closer together, and consequently will bind more tightly on the shoulders. The cable C<sup>8</sup> is connected at one end to the drum-section C<sup>2</sup> and at the opposite end to the wheel of the windmill and is adapted to draw the wheel out of the wind when wound on the drum.

A ratchet-wheel D is arranged on the shaft C' adjacent the drum-section C<sup>3</sup> and is secured to same in any suitable manner, or the section C<sup>3</sup> and the ratchet D may be formed in one piece if the drum is made of metal. An arm E is loosely journaled on the shaft between the side of the casing and the ratchet-wheel D, its inner end being bent downwardly to the rear of the shaft C'. To the forward end of the arm is connected one end of a rope E', the upper end of which is connected to a hook E<sup>2</sup>, carried by a sleeve E<sup>3</sup>, secured on the pump-rod A'.

Projecting rearwardly from the casing C are rods F, threaded at their outer ends. A plate F' is angled intermediate its ends to fit a corner of the post, and the end portions of the plate are perforated to fit over the rods F. This plate is arranged on the opposite side of the post from the casing C and is held in position by suitable nuts fitting over the threaded ends of the rods F.

A plate G is held against one side of the post, the plate having blocks G' on its inner side, which are held between the rear side plate of the casing C and the post. A dog H is pivoted to the plate G, and its forward curved end engages the ratchet-wheel D. A dog H' is pivoted to the inner bent portion of the arm E and is adapted to engage the under side of the ratchet-wheel D. Stop-pins H<sup>2</sup> are carried by the plate G above and below the dog H, the upper one limiting its upward move-



ment and the lower one preventing the dog from falling with too much force into engagement with the ratchet-wheel teeth.

A chain J is connected at one end to the dog H and at the opposite end to the dog H', its intermediate portion passing through a ring carried by a cable J'. A standard J<sup>2</sup> is carried by the plate G and at its upper end carries an idle pulley J<sup>3</sup>, over which the chain J' passes. This cable passes also over the pulley B<sup>3</sup> and at its lower end is attached to a float in the tank B'.

The operation of my device is as follows: The arm E rises and falls with the strokes of the pump-rod, the regulator working on the upstroke only. As the float J<sup>4</sup> rises the dogs H and H' are drawn into engagement with the ratchet-wheel D through the medium of the cable J' and chain J. The movement of the arm E will actuate the dog H' and rotate the ratchet-wheel D, the dog H holding what has been gained by the dog H', thus gradually winding the cable C<sup>8</sup> on the drum and drawing the wheel out of the wind, when the pumping operation will cease. When the water in the tank falls, the float will also fall, drawing the dogs away from the ratchet-wheel and permitting the wheel to again turn into the wind and the pumping operation to be resumed.

The clutch mechanism prevents the breaking of the cable C<sup>8</sup> by reason of a sudden shift in the wind at a time when the wheel was out of the wind, the clutch allowing the ratchet-wheel and section C<sup>3</sup> of the drum to turn while the section C<sup>2</sup> is held stationary by the cable C<sup>8</sup>.

It is obvious that minor changes can be made in the device and also in the arrangement of the various parts with reference to each other without departing from the spirit of my invention.

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

1. The combination with a windmill, pump, and pump-rod, of a casing having a shaft and drum therein, a cable extending from the windmill-wheel to the drum adapted to wind on the latter and draw the wheel out of the wind, a ratchet-wheel connected to the drum, an arm journaled on the drum-shaft and bent

downward in the rear of the shaft, a flexible connection between the forward end of the arm and the pump-rod, a pivoted dog adapted to engage said ratchet-wheel, a second dog pivoted to the inner end portion of the arm and adapted to engage the ratchet and adapted to rotate said wheel as the arm rises and falls, and means for drawing the dogs out of engagement with the ratchet at a predetermined time.

2. A device of the kind comprising a sectional drum, a cable secured at one end to the drum and adapted to draw the wheel of a windmill out of the wind when wound upon the drum, a ratchet-wheel connected to the other section of the drum, a clutch connecting the sections and adapted to permit the rotation of the ratchet and section of the drum connected thereto independent of the section on which the cable is wound, means operable by a pump-rod for actuating said ratchet-wheel, the said pump-rod being driven by the windmill-wheel, a float arranged in a supply-tank, and means connecting the float and the ratchet-actuating means and adapted to throw the latter out of engagement with the ratchet-wheel when the water in the tank has risen to a predetermined level.

3. In a device of the kind described, a drum, a cable secured at one end to the drum and adapted when wound on the drum to draw a windmill-wheel out of the wind, a ratchet-wheel arranged adjacent the drum, an arm arranged adjacent said wheel, means for connecting the outer end of said arm to a pump-rod actuated by the windmill, a dog pivoted to said arm and adapted to engage the ratchet-wheel and rotate same when the arm is actuated, a dog adapted to coact with the first-mentioned dog and prevent reverse rotation of the ratchet-wheel, a float arranged in a tank supplied by the pump operated by the windmill, a cable connecting said float and the dogs and adapted to withdraw them from engagement with the ratchet-wheel when the float has risen to a predetermined level, substantially as described.

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