(No Model.)

J. H. BERKY.

AUTOMATIC GOVERNOR FOR WIND WHEELS.

No. 481,095. Patented Aug. 16, 1892.

Fig. 1.

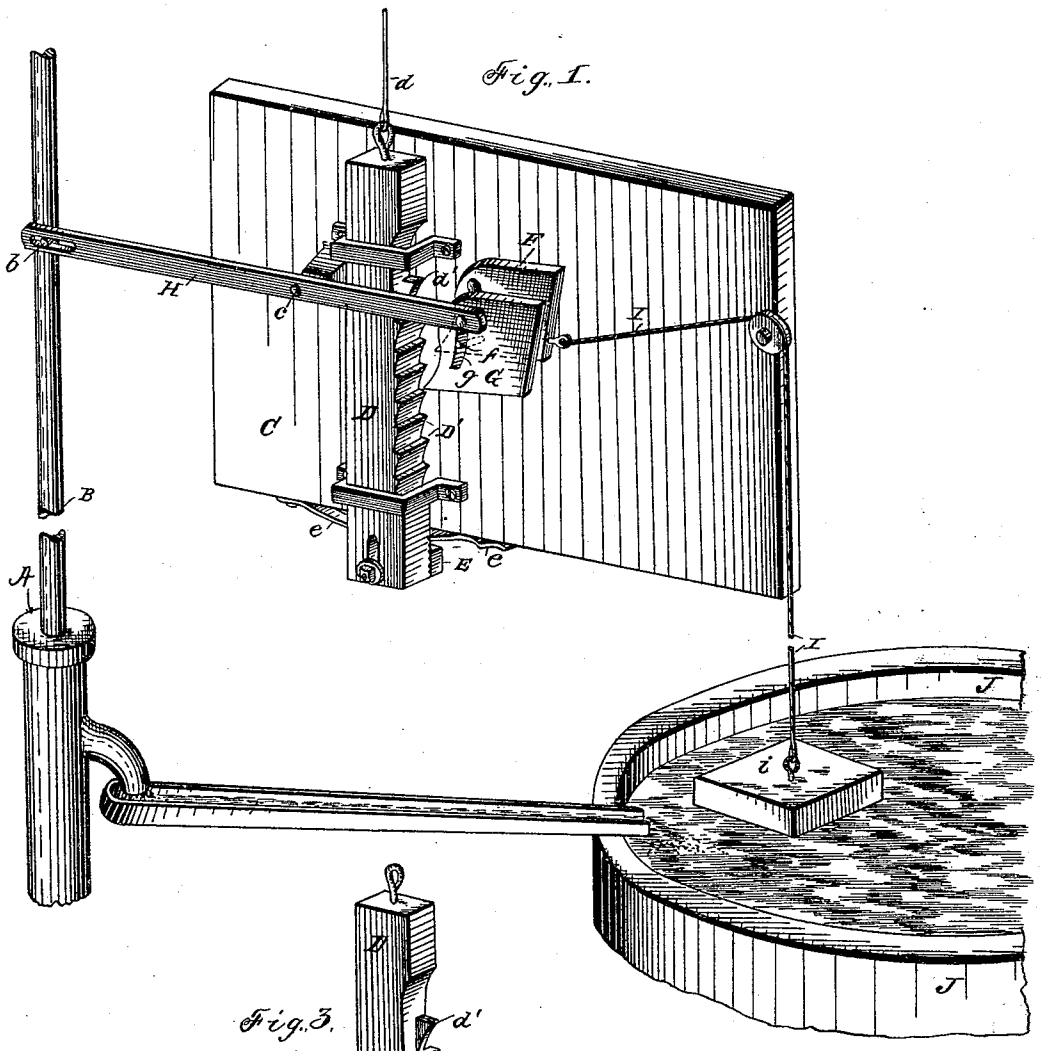
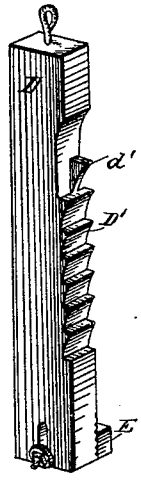


Fig. 3.



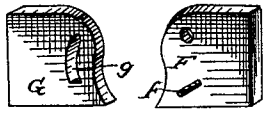


Fig. 2

Witnesses
W. R. Edelen
Arthur E. Dowell

Inventor.
J. H. Berky.
per T. H. Alexander Atty.

UNITED STATES PATENT OFFICE.

JACOB H. BERKY, OF MISHAWAKA, INDIANA.

AUTOMATIC GOVERNOR FOR WIND-WHEELS.

SPECIFICATION forming part of Letters Patent No. 481,095, dated August 16, 1892.

Application filed August 18, 1891. Renewed June 24, 1892. Serial No. 437,842. (No model.)

To all whom it may concern:

Be it known that I, JACOB H. BERKY, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Automatic Governors for Wind-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a perspective view of my improved automatic governor for wind-wheels. Fig. 2 is a detail view of the pawls, detached; Fig. 3 a similar view of the ratchet-bar, detached.

This invention is an improvement in governors for wind mills or wheels for pumping water, designed to automatically control the position of the vane so as to throw the wheel into or out of action; and it consists in the novel construction and combination of parts hereinafter described and claimed.

Referring to the drawings by letter, A designates the pump, the plunger of which is connected to the vertically-reciprocating pitman-rod B, actuated by the wind-wheel (not shown) in the ordinary manner.

C designates a board attached to the supporting-frame of the mill or other convenient position.

D designates a vertically-movable bar secured to board C by straps or other suitable means. Bar D is suspended by a wire *d*, which is connected to the vane-controlling chains, (not shown,) which are arranged as usual, so that by pulling down on the wire the vane will be shifted parallel with the wheel and the mill consequently stopped, and when the wire is released the vane will open and throw the wheel to the wind.

To the lower end of bar D is adjustably attached, by a bolt and nut, a buffer E which is adapted to impinge against the lower edge of the board C, or a suitable stop, and limit the upward movement of the bar, and a buffer spring *e* may be arranged, as shown, to deaden the shock of impact. One side of bar D is ratchet-toothed, as shown at D′, and the teeth are engaged by a pawl F, pivoted on board C beside the bar and so formed that its point will be held in contact with the teeth of the bar by gravital action.

G represents a similar pawl lying beside pawl F, but pivotally suspended from the end of a vibrating lever H, fulcrumed on a pin *c*, attached to board C, the outer end of lever H being slotted and engaged by a pin *b* on the pitman B, as shown. In the inner face of pawl G is a curved slot *g* in which projects a pin *f* on pawl F, which does not, however, interfere with the vertical movement of pawl G.

I designates a cord connected to pawl F and passing over pulleys to a weighted float *i* in the water-tank J, which is supplied from pump A.

The operation is as follows: When the water in tank J is low, float *i* is suspended by cord I and pulls pawl F out of engagement with bar D, and pin *f*, catching the side of slot *g*, pulls pawl G out of engagement with bar D, also. This leaves the bar D free to rise and the vane turns outward, throwing the wheel to the wind and lifting bar D through wire *d*, and pumping begins. As tank J fills, the float gradually rises until it relaxes cord I and permits the pawl to contact with the bar. As soon as contact is established, pawl G, which is continually vibrated up and down by lever H during the reciprocation of the pitman, engages a tooth of bar D and forces the latter downward, and pawl F drops in and locks the bar as pawl G rises to engage the next tooth. This continues until the bar is forced down sufficiently to throw the vane parallel with the wheel and unship the mill so that the pitman ceases to reciprocate.

In order to prevent injury to the device, should the pitman reciprocate after the vane is unseated for any reason, a portion of the upper teeth of bar D, that would be engaged by pawl G, are cut away, as indicated at *d′*, so that pawl G ceases to affect the bar after it is sufficiently lowered. When the water in the tank falls enough to cause cord *i* to disengage the pawls from the bar, as described, the mill will be thrown into operative position and pump until the tank is filled to the desired level.

Having thus described my invention, I claim—

1. In a windmill-governor, the combination

of the movable toothed bar and the locking-pawl pivoted on a fixed support beside and engaging said bar, a float and connections between the same and said locking-pawl, an oscillating lever connected by one end to and reciprocated by the pitman-rod, a working pawl suspended from the free end of said lever and lying beside said locking-pawl, and a pin or stud on one pawl loosely engaging the other, whereby the working pawl is thrown into or out of engagement with the bar by and with the locking-pawl, substantially as described.

2. The combination of the movable toothed bar, the locking-pawl engaging the same, the reciprocating pawl beside the locking-pawl, the float and connections for disengaging said pawl from the bar and the oscillating lever connected to the pitman-rod at one end and carrying said reciprocating pawl at the other end, and the buffer adjustably secured to said bar for limiting its upward movement, substantially as and for the purpose described.

3. The combination of the pump and reciprocating pitman, the vertically-movable toothed bar adapted to be connected to the vane-operating chain of a windmill, the pivoted pawl engaging said bar, the float and cord for controlling said pawl, the oscillating lever actuated by the pitman, and the pawl suspended from the inner end of said lever beside the aforesaid pawl, and having a slot engaged by a pin on said pawl, so that the suspended pawl can reciprocate independently of the other and both be disengaged simultaneously from the bar when the float drops, and the buffer on said toothed bar, all substantially as and for the purposes specified.

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

JACOB H. BERKY.

Witnesses:
JAMES DUSHANE,
NEILL G. CRABELL.