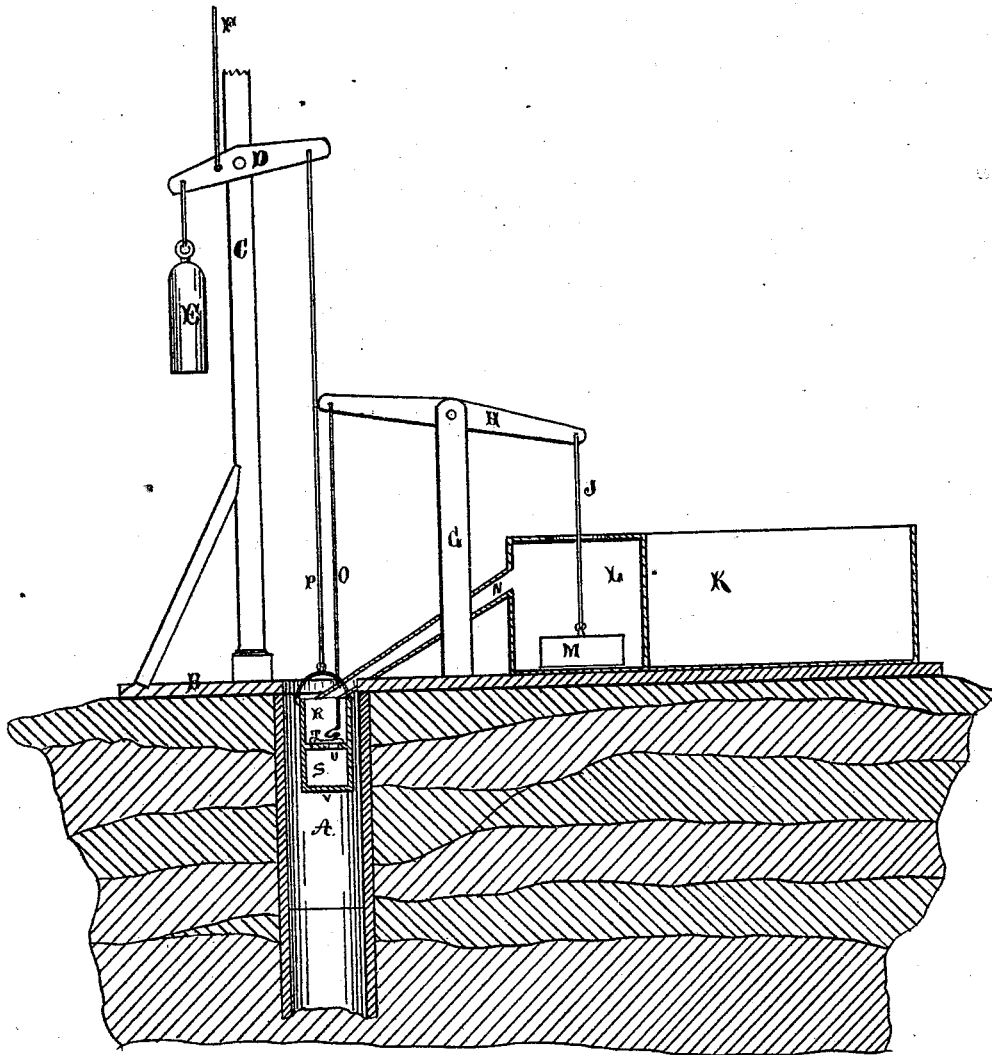


W. L. OLIVER.  
Governor for Wind-Mills.

No. 159,768.

Patented Feb. 16, 1875.



Witnesses;  
*W. L. Oliver*  
*E. H. Smith*

Inventor.  
*William L. Oliver*

# UNITED STATES PATENT OFFICE.

WILLIAM L. OLIVER, OF RANTOUL, ILLINOIS.

## IMPROVEMENT IN GOVERNORS FOR WINDMILLS.

Specification forming part of Letters Patent No. **159,768**, dated February 16, 1875; application filed January 4, 1875.

*To all whom it may concern:*

Be it known that I, W. L. OLIVER, of Rantoul, Champaign county, State of Illinois, have invented an Improved Governor for Windmills, of which the following is a specification:

The object of my invention is to construct a governor for windmills used for raising water, in such a manner that the wings of the mill are thrown into the wind when more water is wanted, and thrown out of the wind when the desired quantity of water is pumped into the tank; also, to protect the float-chamber from freezing.

In the drawings, A represents a well, over which is the curbing B. On this curbing is an upright post, C, that supports the lever-bar D. At one end of this bar is attached the weight E, and between the weight E and the fulcrum of the lever is a connecting-rod, F, that extends upward and connects with the mechanism that changes the position of the wings of any ordinary windmill. On the other end of the lever D is the wire or chain connection P to the double bucket R S. This bucket has two apartments, R and S, one above the other, with a large hole in the partition, and a flap-valve, T, hinged on the top. At the bottom of the apartment S is a small hole, V, for the purpose of allowing the water to leak gradually out. On the top of the valve T is a connection for the chain and rod O, which extends upward and connects with one end of the lever H, which is supported on the post G, and at the other end of the lever H is a chain or rod, J, which extends downward and passes through the covered part L of the float-chamber of the tank K, and is attached to the float M, as shown. N represents an overflow-trough from the tank L K to the bucket in the well.

The operation of my improved governor is as follows: When in the position shown in the drawings, the wings of the mill are in the wind, and the mill is at work pumping water from the well into the tank L K. As the water rises in the tank the float M also rises, and the chain on the rod O coils itself up on the valve T, and when the tank is full enough, the surplus water runs through the trough N into the chamber R of the bucket;

and when enough water is in the bucket to counterbalance the weight E, then the bucket descends into the well far enough to cause the lever D to work the connecting-rod F and shut the wings of the mill, and throw them out of the wind, when the mill will be stopped and continue so until the water in the tank is lowered enough to cause the float M, with its connections, to open the valve T in the bucket, when the water rushes through the large hole in the partition into the lower chamber, S, where it gradually leaks out through the small hole V in the bottom of the bucket, until the weight E counterbalances the bucket, when the bucket ascends in the well, and the lever D, by its connections with the mill, opens the wings to the wind again, and the mill repumps the tank full.

It is necessary to have a very large hole in the partition under the valve T, so that the water can leave the upper chamber of the bucket almost instantly, and still hold its weight in the lower chamber, S. If it did not do so, when enough water had left the top chamber to let the weight E counterbalance it, the valve T would close, and no effect would be had on the wings of the mill; but by letting the water drop suddenly into the lower chamber, all the weight of water is held there until it is all out of the top chamber, and as the water gradually leaks out at the small hole in the bottom of the bucket, it gradually ascends until the mill is set to work again.

Around the covered part L of the tank is packed straw, sawdust, or any other material to protect the chamber L from freezing. This leaves the float M always free to rise or fall, as may be required, and the trough N serves to conduct the warm air from the well into the covered chamber L in the winter time by covering the well up.

What I claim as new, and wish to secure by Letters Patent, is—

1. The double bucket R S, with a large opening in the partition between them, and under the valve T, to allow the water to rush rapidly through into the lower chamber, S, when the valve T is opened, and the small hole V in the bottom of the bucket, for the purpose of allowing the water to gradually

leak out, all in combination with the trough N, substantially as specified.

2. The combination of the closed float-chamber L of the tank, trough N, and closed well A, for the purpose of conducting warm air from the well into the float-chamber, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM L. OLIVER.

Witnesses:

S. C. FRINK,  
E. O. FRINK.