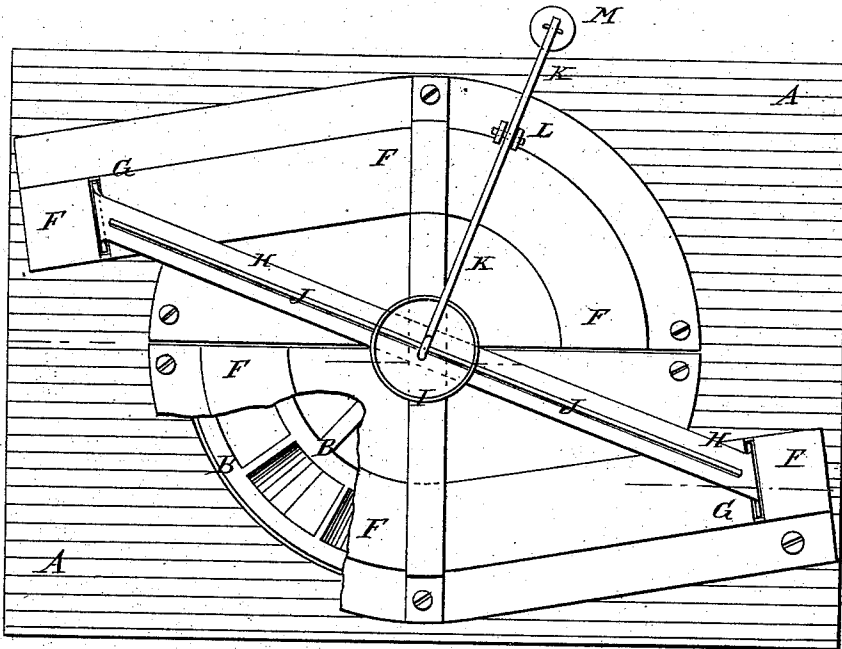


K. H. HIGGINBOTHAM.  
Water-Wheel.

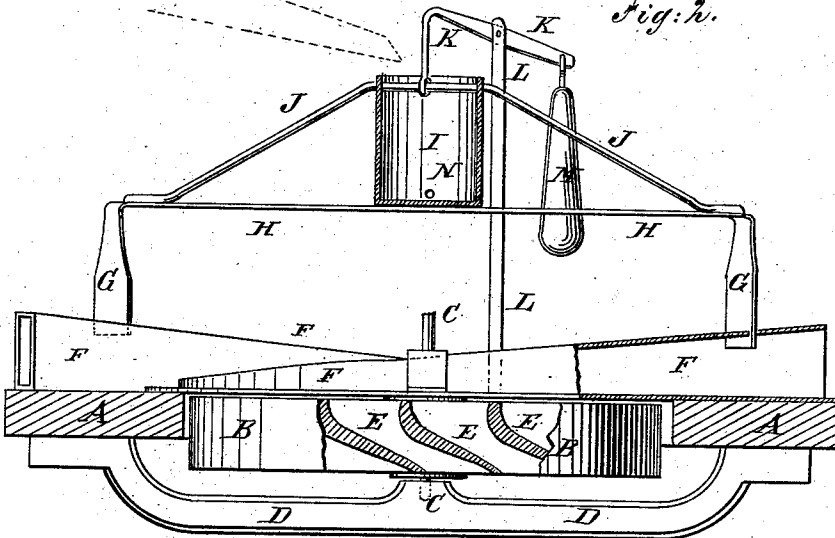
No. 225,373.

Patented Mar. 9, 1880.

*Fig: 1.*



*Fig: 2.*



WITNESSES:

*Chas. Nida*  
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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

KIMP HILL HIGGINBOTHAM, OF WATERFORD, MISSISSIPPI.

## WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 225,373, dated March 9, 1880.

Application filed January 6, 1880.

*To all whom it may concern:*

Be it known that I, KIMP HILL HIGGINBOTHAM, of Waterford, in the county of Marshall and State of Mississippi, have invented a new and useful Improvement in Water-Wheels, of which the following is a specification.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional side elevation taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish water-wheels so constructed that they can be run with a very low head of water, and can be stopped and started automatically.

A represents the floor of the flume or platform, with which the wheel B is connected. The wheel B works in a circular hole in the floor A, and is attached to the shaft C, from which the power is taken to the pump or other machinery to be driven. The lower end of the shaft C revolves in a socket in the bridge or spider D, attached to the lower side of the floor A. I propose to have the lower end of the shaft C revolve upon the point of a set-screw, so that the wheel may be adjusted higher or lower, as may be required.

The buckets E of the wheel B are inclined, are radial, are interposed between the central part and rim of the wheel, and have their upper ends curved upward into a vertical position, or nearly so.

Water is admitted to the wheel B through two chutes, F, the forward parts of which are curved into the arc of the wheel B, and gradually decrease in depth, as shown in Figs. 1 and 2. The curved parts of the chutes F, that are over the buckets E of the wheel B, are open upon the lower side to give the water free access to the buckets E.

With this construction the wheel can be run by a very low head of water, or even by the current of a river or other stream, by submerging the wheel and guiding the current of water into the chutes.

The entrance of water into the chutes F is prevented, when desired, by gates G, which move down and up through cross-slots in the upper sides of the said chutes F. The upper ends of the gates G are attached to the opposite ends of a bar, H, upon the middle part of which rests, and to it is secured, a barrel or

other vessel, I. The vessel I is further secured in place by the bail or bent rod J, the middle part of which passes through the upper part of the said vessel I. The ends of the rod or bail J are attached to the end parts of the bar H. To the center of the bail J is attached the end of a lever, K, which is pivoted to a post, L, or other suitable support. To the other end of the lever K is attached a weight, M, sufficient to raise the gates G and admit water to the wheel B when the vessel I is empty. When the vessel I is filled with water its weight overbalances the weight M and closes the gates G.

This construction is especially designed for use when the wheel B is used for raising water into tanks for railroad purposes, or for other purposes where water is required to be raised above the surface of the ground. In this case a small pipe is connected at one end with the upper part of the water-receiving tank, and its other end is supported in such a position as to discharge water into the vessel I.

With this arrangement when the tank becomes full the water overflows through the said pipe into the vessel I and fills it. As the vessel I becomes full its weight overbalances the weight M and closes the gates G.

In the lower part of the vessel I is formed a small outlet, N, through which the water in the vessel I gradually flows out, decreasing the weight of the vessel I. As the vessel I becomes empty the weight M overbalances it and opens the gates G, again admitting water to the wheel B.

In this way the wheel B will be stopped and started automatically, and when started will work until the receiving-tank is filled.

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

In a water-wheel, the combination, with the chutes F, of the gates G, the connecting bar and bail H J, the vessel I, the lever K, and the weight M, substantially as herein shown and described, for admitting and shutting off the water automatically, as set forth.

KIMP HILL HIGGINBOTHAM.

Witnesses:

S. D. HAMILTON,  
M. F. WILLIS.