

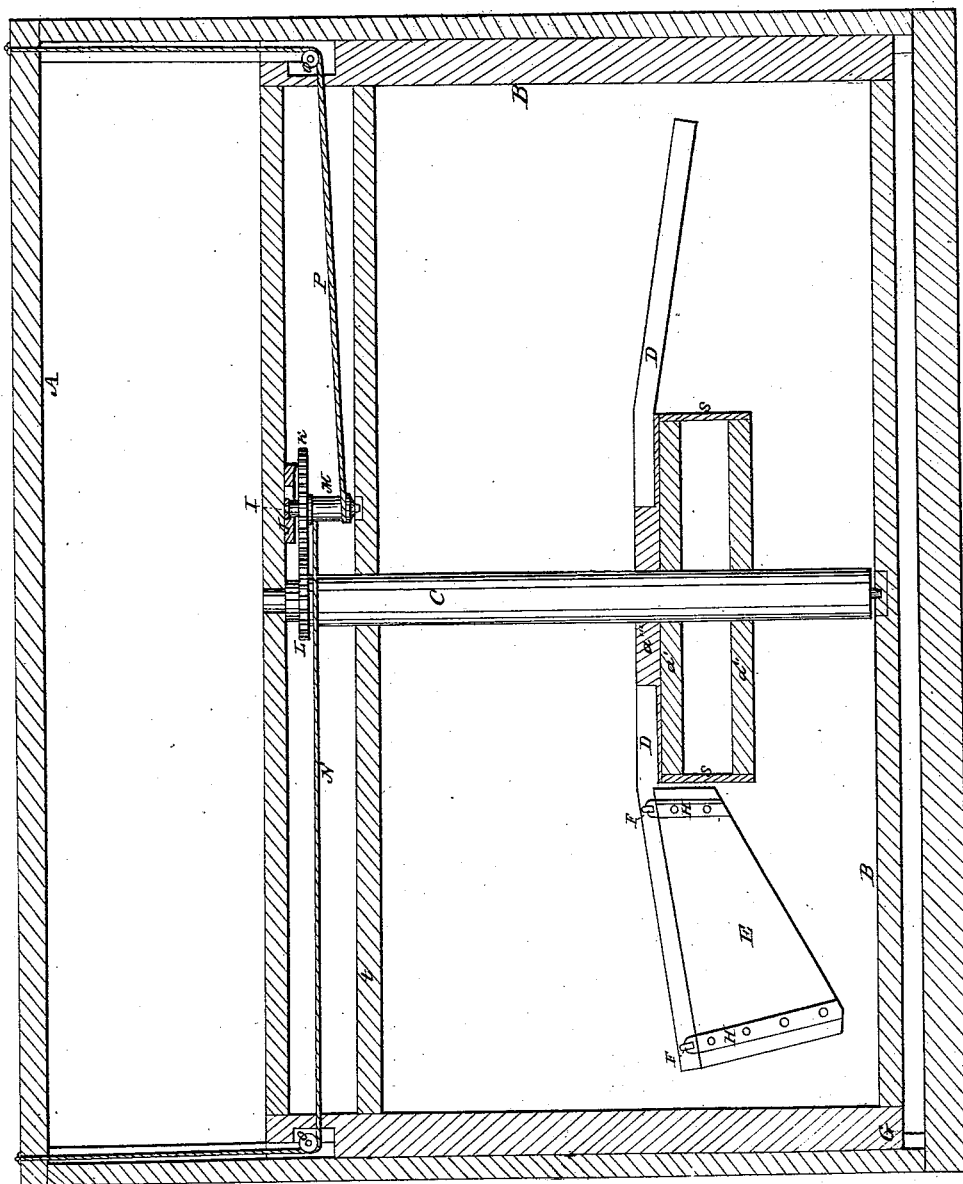
W. Miles,

Water Wheel,

No. 2,836,

Patented Oct. 26, 1842.

Fig. 1

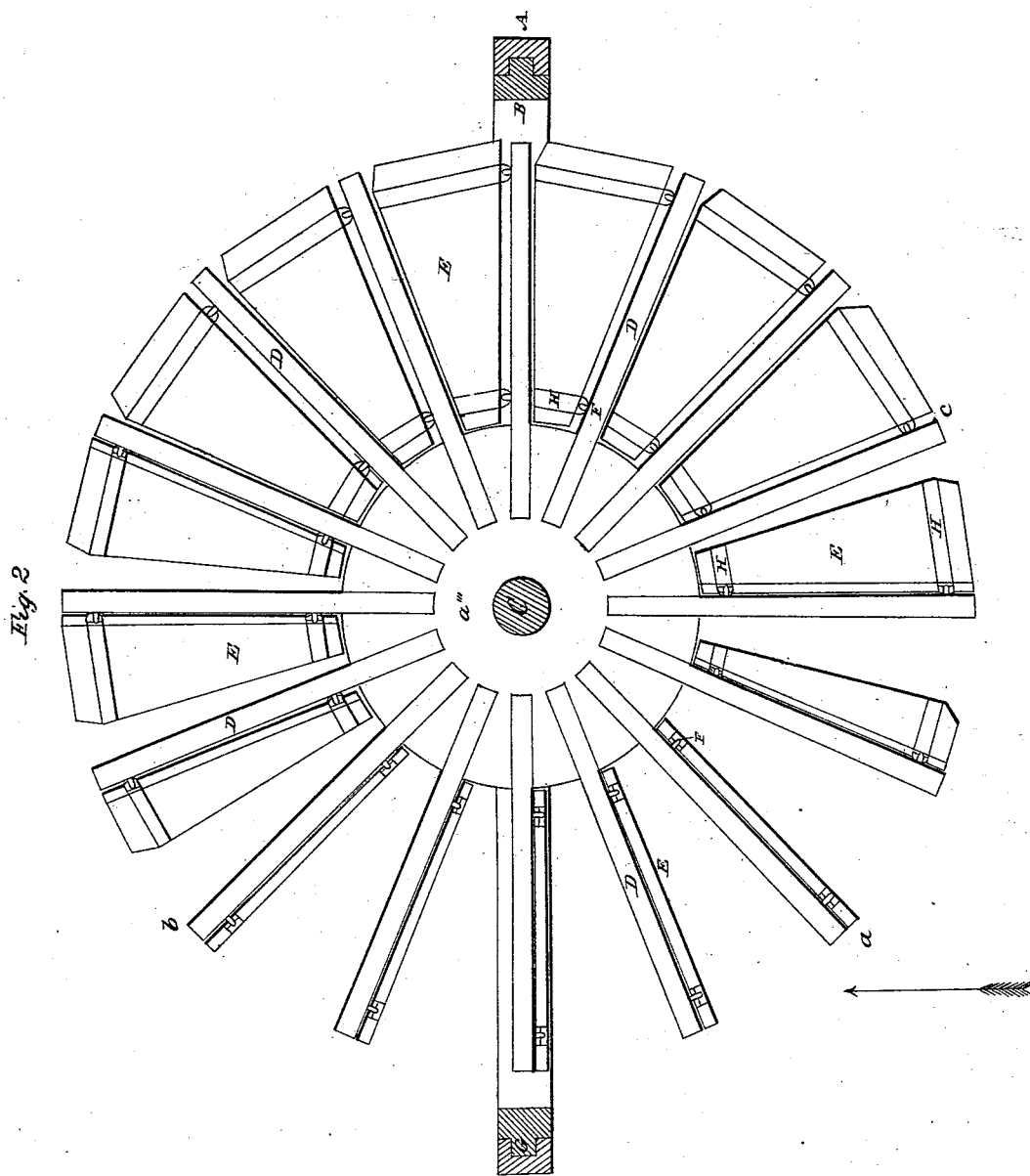
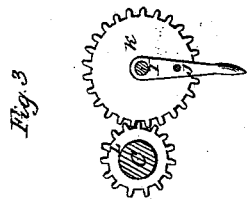


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UNITED STATES PATENT OFFICE.

WM. MILES, OF BOONSBORO, MARYLAND.

CURRENT WATER-WHEEL.

Specification of Letters Patent No. 2,836, dated October 26, 1842.

To all whom it may concern:

Be it known that I, WILLIAM MILES, of Boonsboro, Washington county, State of Maryland, have invented a new and useful
5 Improvement in the Current Water-Wheel for Propelling Machinery, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

10 Figure 1, is a vertical section through the center of the wheel, and frame in which it is fastened; Fig. 2 top view of the wheel; Fig. 3 top view of the cog wheel and pinion, and lever for throwing them out of gear.

15 Similar letters refer to corresponding parts.

The outer frame A consists of two vertical posts connected together at top and bottom by two horizontal timbers. Inside
20 of this frame is placed, a rising and falling frame B, also composed of two vertical posts, about one half the length of the above connected together at top and bottom by two horizontal timbers. On the outside of
25 these posts is formed a tongue G, which moves in a longitudinal groove made on the inside of each of the posts of the outer frame. Inside this inner frame, and mid-
30 way between the vertical posts of the same, is placed a vertical shaft C, which turns at the bottom, in a step secured to the horizontal timber and is supported at the top
35 by passing through an opening, made in the upper horizontal timber, and in which it turns. To this shaft near its lower end are
40 firmly secured two heads a' a'' , about 15 inches apart and connected together at their peripheries by a number of staves s extending from one to the other and fitted closely
45 together all around, so as to form an air tight chamber. On top of the upper head a' is fastened another head a''' of the same size, with a number of oblong mortises or
50 slots made on its periphery equal distances apart and extending from the periphery in direct lines toward the center about one half the extent of the radius of said head. In
55 each of these mortises is fastened a bent timber D, or arm, which fits said mortise closely and extends horizontally to the periphery of said head, from whence it inclines downward to form an angle of about 10 degrees with the horizon and extends about 5 feet. To each of these arms or timbers D is attached, by hinges, a paddle or float E, in length equal to the distance from

the periphery of the head to the extent of the arms and twice as wide at the outer end as the inner one. These paddles are made
60 of wood, and are connected to the arms, by staples F driven in the side of the arms, and through eyes formed on straps of iron H secured at each end of the paddle and extending across the same for the purpose of
65 strengthening the paddles and also to assist to gradually sink or turn them on the hinge until they hang in a vertical position, when they reach the point c in the drawing and the water has no effect on them.
70 About 18 inches below the top horizontal timber of the rising and falling frame, is placed another horizontal timber t of the same size, and mortised and tenoned into the vertical posts of said frame and extending from one to the other. On top of this
75 timber and near the vertical shaft, is secured a step in which, turns an upright axle I, which extends above to the under side of the top horizontal timber, and passes through an opening made in the end of a
80 lever J which lever is fastened to the lower side of said horizontal timber by a pin passing through its center and into the said timber, and on which it turns. On the above
85 mentioned axle or shaft I and near the top thereof is fastened a cog wheel K, which, by moving the handle of the lever to the right is thrown into gear with a pinion L
90 fastened on the vertical shaft C of the paddle wheel. On this shaft I below the cog wheel is secured a windlass M, a little greater in diameter than the shaft and about one half its length, at the top of which is
95 attached a cord N which passes over a pulley O fastened in a mortise or recess made in the vertical post of the inner frame B and extends to the top of the outside frame A where it is fastened. To the lower end of
100 this windlass and on the opposite side, is attached another cord P which passes over another pulley Q, fastened in a mortise made in the opposite post, and extending to the top of the outer frame A, where it is also fastened. The above mentioned cog wheels,
105 lever, cords &c., are for the purpose of raising the wheel above the surface of the water, by the action of the current on the same, when necessary, which is done in the following manner.

When it is desired to raise the wheel above
110 the water, the lever J is moved to the right which will force the cog wheel K to the left

and cause it to mesh in gear with the cog wheel or pinion L on the vertical shaft C, and turn, together with the windlass M, which will wind up both the cords, and immediately commence raising the wheel and inner frame B toward the surface of the water and will continue to wind until it is raised so far above the surface that the water can have no action on it, where it is secured by passing a pin through an opening in the vertical post of the outer frame and into an opening in the vertical post of the inner frame B. When it is desired to lower the frame, the pin is taken out, the lever moved to the left, which disengages the cog wheel with the pinion on the vertical shaft and the wheel and inner frame gradually lowers to its original position. The action of the current on this wheel is as follows: The wheel being entirely submerged in the water, and the current flowing in the direction indicated by the arrow Fig. 2, the paddles or floats will assume a vertical position at the point *a* and remain in that position, receiving the full force of the current until they arrive at the point *b* when they will gradually rise until they arrive at a position on a line with the arms, which they will retain

in returning against the current until they reach the point *c*, when they will commence to gradually turn on the hinges by the action of the water on their surfaces, until they reach the point *a* when they will have resumed their original position.

The air tight chamber on the vertical shaft, is for the purpose of removing the friction from the gudgeon of said shaft, by raising by its buoyancy said gudgeon with shaft and wheel a short distance above the bottom of the opening in the step and keeping them in a suspended state, the opening of said step and the opening in the upper horizontal timber of the inner frame serving to keep the shaft in a vertical position.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

1. The manner of raising and lowering the wheel by means of the cog wheels, lever windlass, pulleys, and ropes as described.

2. Also the inclined arms F with the floats E arranged in the manner and for the purpose set forth.

WILLIAM MILES.

Witnesses:

E. MAHER,
BRADFORD ROSTEL.