

J. G. Garretson,

Water Wheel,

N^o 2,300.

Patented Oct. 11, 1841.

Fig. 1.

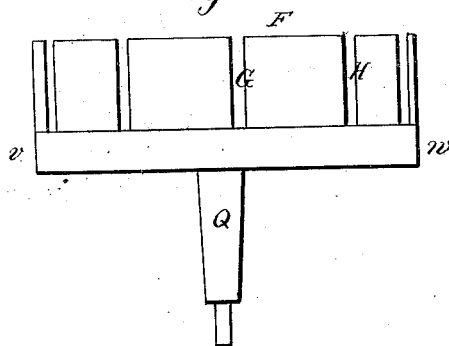


Fig. 2.

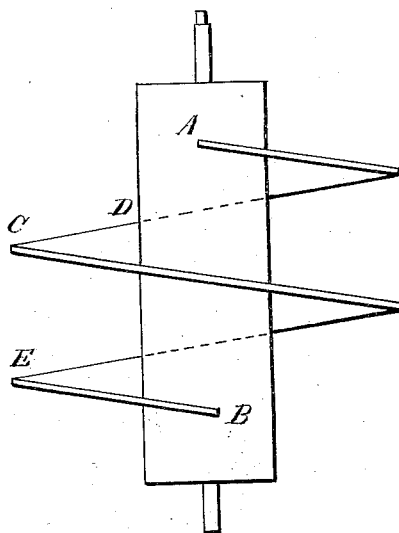
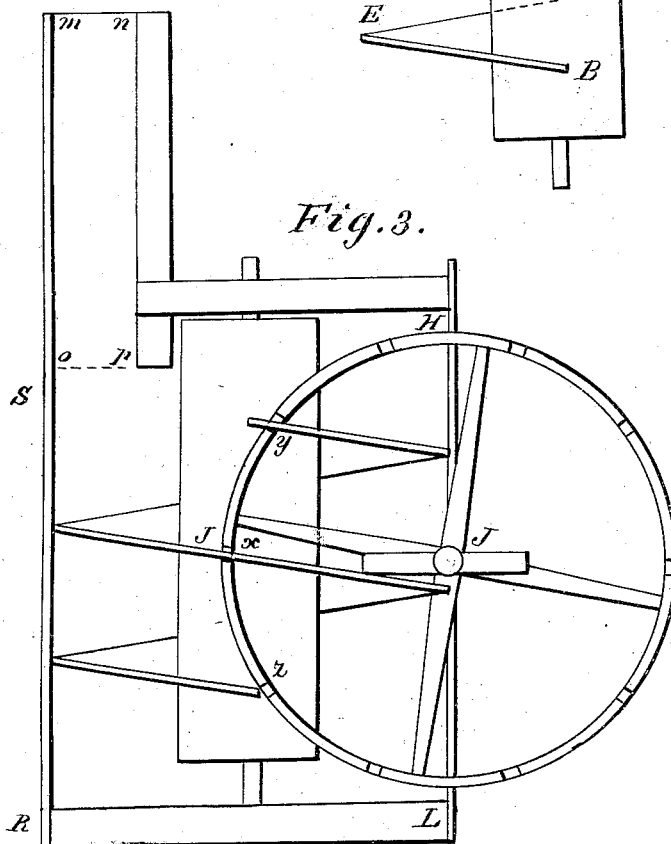


Fig. 3.



UNITED STATES PATENT OFFICE.

JOHN G. GARRETSON, OF MUHLENBURG, OHIO.

WATER-WHEEL.

Specification of Letters Patent No. 2,300, dated October 11, 1841.

To all whom it may concern:

Be it known that I, JOHN G. GARRETSON, of Muhlenburg, in the county of Pickaway and State of Ohio, have invented a new and useful Improvement in Water Wheel for the Purpose of Propelling Mills and Machinery, which I call the "Shire-Wheel and waiter"; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of the specification, in which—

Figure 1 is a view of the secondary wheel which I denominate the "waiter." Fig. 2 is a view of the spire wheel, its shaft, and gudgeons. Fig. 3 is a view of a section of the circular base containing the spire wheel through which case the shutters of the water wheel extend to close up the aperture or issue formed by the descent of the revolution of the spire, and so preventing the escape of the water unless the wheels move, and then using a definite quantity of water and that in direct proportion to the number of revolutions of the wheels

To enable others skilled in the art to make and use my invention I will proceed to describe the construction and operation of the same in the different parts as represented in the above named drawings.

Firstly I make the waiter, Fig. 1, with the shaft 2, Fig. 1; say 3 or 4 feet long 6 inches square. Gudgeoned at each end in the common way then on one end of the shaft 2 inches from the neck of the gudgeon I hang the wheel *v w* Fig. 1 by arm or otherwise from 40 to 60 inches in diameter (say 42 inches for a 6 foot head varying the size according to the head of water you have) the rim being made of wooden cants or other good materials from 4 to 6 inches thick rim seen *v w* Fig. 1. Then to make the shutters F, G, H Fig. 1 take sheet iron from $\frac{1}{8}$ to $\frac{1}{4}$ inch thick, from 14 to 16 inches wide, length equal to the circumference of the rim *v, w* Fig. 1. Weld or rivet the ends together forming a broad band one edge of which I drive on the rim *v, w*, Fig. 1, the other edge extending toward Fig. 1. Then turn or otherwise make the band G, H, Fig. 1, round and true and lay it off into 10 or 12 equal parts, one of which is seen at F, G, H, Fig. 1, cutting the notches G or H Fig. 1 of the length of C, D, Fig. 2, and wide enough to admit the edge of the spire at C,

Fig. 2. One of said equal parts I call a shutter. Then to construct the spire wheel, Fig. 2, take good sound oak 16 by 16 inches square and straight 6 feet long. Gudgeon each end the one a coupling top and the other a step gudgeon. Then turn gudgeons and wood around and true, which forms the shaft A, B, Fig. 2, a true cylinder from end to end, say 15 inches in diameter for a 6 foot head. Then to lay off and make the spire I begin at any convenient point as at A, Fig. 2, and cut a mortise or groove $2\frac{1}{2}$ or 3 inches deep and descending so much in the revolution as to be equal to the width of the shutter G, H, Fig. 1, measuring in the direction of Y, H, Fig. 3, and so laying off the spire on the shaft that the shutter in all positions of the waiter may just fill the space between the spire until the shutter reaches the point Z, Fig. 3, when the spire leaves it.

To form the spire A, B, Fig. 2.—Which makes just two revolutions around the shaft. Take good 2 inch oak or hickory plank 12 inches wide. Cut pieces just sections of a circle whose diameter is equal to the diameter of the out edge of the proposed spire, say 36 or 40 inches for a 6 foot head. Then drive the acute ends of the timber into the above described mortise or groove and pin or spike all fast and trim all neatly and you have a beautiful spire. Or use thick sheet iron if convenient.

When the spire wheel and water is used to drive grist mills without gearing the shaft standing perpendicularly must rest the gudgeon on a bridgetree R.

L, Fig. 3, connected with the circular case, the outlines of a transverse section of which is seen at S, K, R, L, Fig. 3.

To make the case stake 4 scantling 8 feet long 6 by 6 inches square for the corner posts, the outside of which I place 2 inches farther apart than the length of the diameter of the spire wheel. Clothe the outside with 2 inch plank spiking all fast. The inside of the case must be made truly circular, which may be done by cutting the one eighth of a circle out of a three inch plank 14 inches wide and of the necessary length, of which 8 pieces will be required to form the hollow circle to receive the spire wheel. Then at the point I, Fig. 3, on the outside of the case with a sweep equal to the semidiameter of the waiter Fig. 1 I describe the circle.

K, J, L Fig. 3 on the case through which I cut an aperture to receive the shutters of

the waiter—fixing the gudgeon of Fig. 1 at the point I, Fig. 3, on a plane with or a little below the center of the spire when in the case. Hang the other gudgeon of the waiter
5 in any convenient way yet so that it can be removed during freezing weather, &c. Thus combined and operated together with the whole head of water you have standing over and on the spire wheel acting by its
10 gravity or pressure we obtain nearly the whole power of the descending water with great velocity and little friction.

I also propose using the spire wheel and waiter for propelling sawmills the shaft of
15 the spire wheel lying horizontally.

Now that which I claim to be my invention and desire to secure by Letters Patent is—

The combination of the spire wheel and the case surrounding it with the wheel which
20 I denominate the waiter the whole being constructed combined and operating in manner set forth, forming a propelling power for mills and machinery receiving
25 and transmitting the power of descending waiter.

JOHN G. GARRETSON.

Witnesses:

WILLIAM STAYNER,
JOHN YOAKUM.