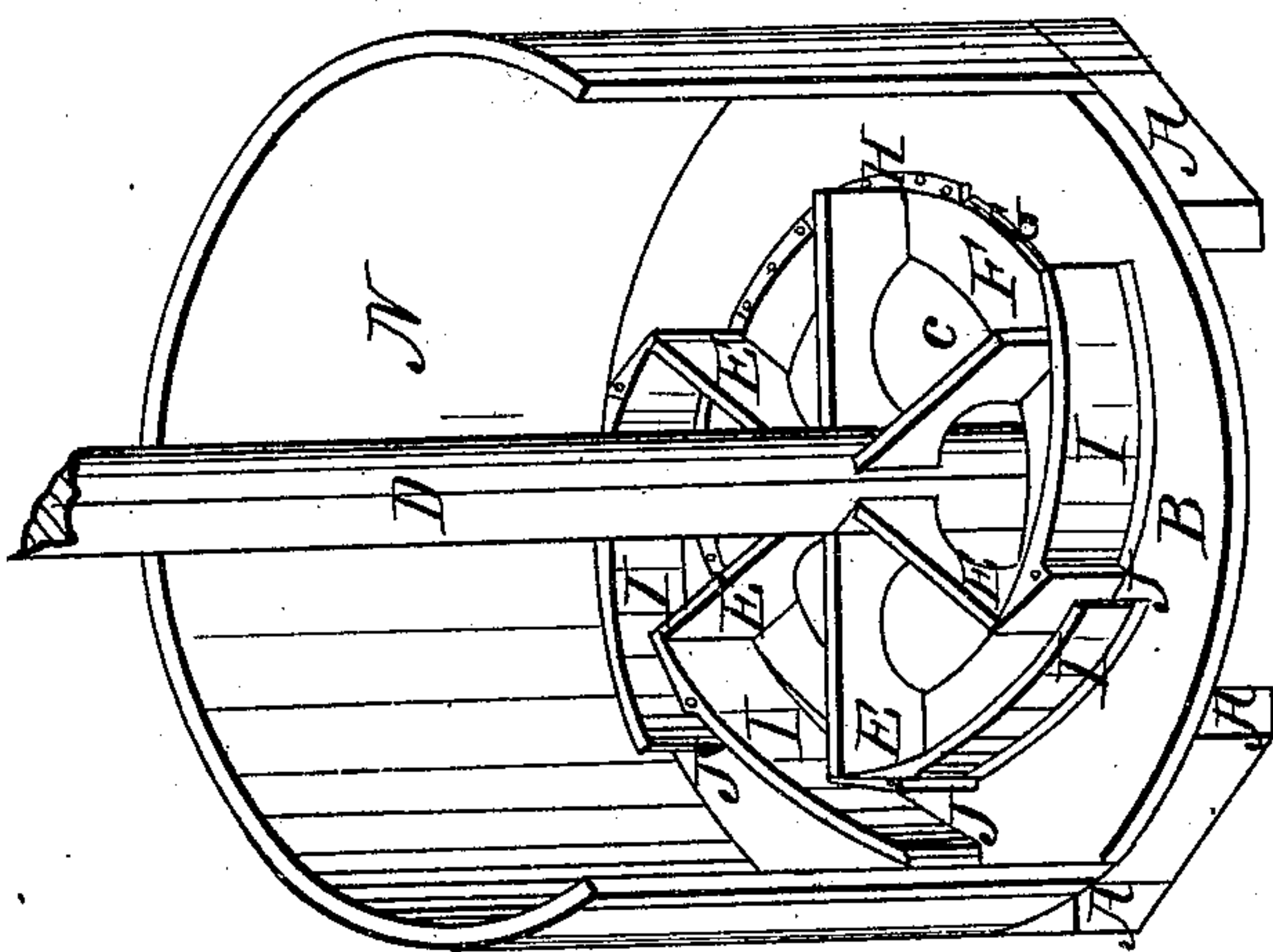
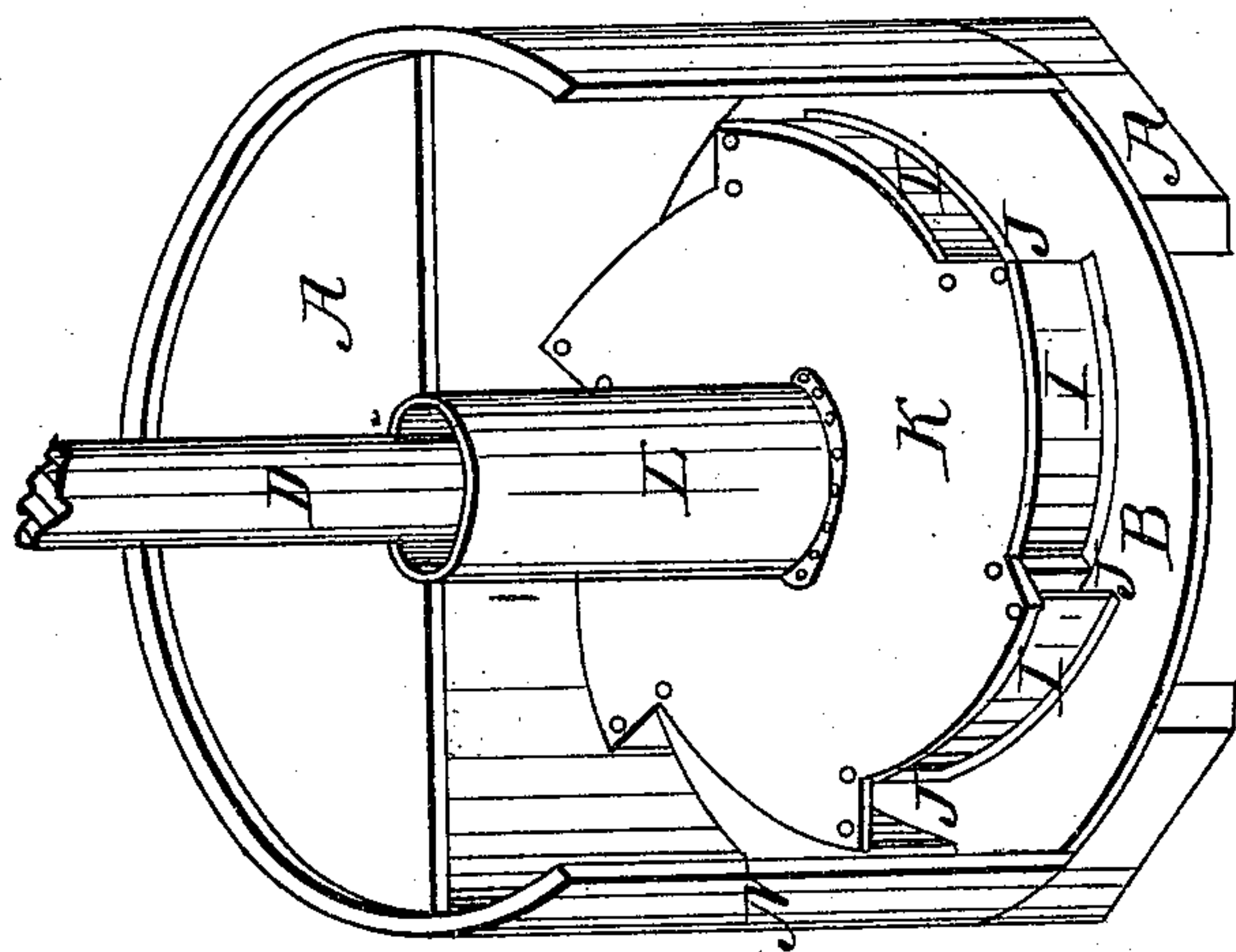


*C. Warner,
Water Wheel.*

N^o 404.

Patented Sep. 22, 1837.



UNITED STATES PATENT OFFICE.

CHAPMAN WARNER, OF OXFORD, NEW JERSEY.

IMPROVEMENT IN HORIZONTAL WATER-WHEELS.

Specification forming part of Letters Patent No. 404, dated September 22, 1837.

To all whom it may concern:

Be it known that I, CHAPMAN WARNER, of Oxford, in the county of Warren and State of New Jersey, have invented an Improvement in Horizontal Water-Wheels which is described as follows, reference being had to the annexed drawing of the same, making part of this specification.

This wheel is constructed as follows: Having determined the size of the wheel, lay down pieces of timber A A A A upon the sheathing, the timbers being of sufficient thickness to leave room for the water to pass out between the floor B and the sheathing. The floor B rests upon the before-mentioned timbers and is formed of thick planks framed together, leaving a circular opening C in the center the size of the wheel; or the floor may be made of cast-iron.

D is the shaft turning upon a pivot secured to the sheathing or some solid foundation prepared for that purpose.

E E E E E E are the buckets or vanes let into the shaft D.

F is a circular plate of cast-iron of the same diameter of the wheel, fastened to the lower sides of the buckets by bolts passing up through them and riveted or screwed fast by a burr. On the outer edge and under side of said plate is left a narrow projection G, which increases the diameter of the plate beyond the ends of the bucket, and is covered by segments of a narrow circular plate H let into a groove level with and secured to the floor; and also so as to be level with the plate F, the projecting edge of which it covers, its use being to prevent the escape of water between the outer edge of the plate F and the floor B.

The plate F revolves within the opening C, and has a circular opening in its center of an area three times at least as great as that of the area of all the sluices together, through which the water enters the wheel.

I are the guides formed of curved pieces of wood or cast-iron (the number of which should correspond with the number of buckets, both of which being varied according to circumstances) to give the water its proper direction to act to the best advantage on the buckets or vanes.

J J J J J J are the sluices through which the water passes to the wheel.

K is the deck or cover of the wheel resting on the guides and secured by bolts passing through the floor, the guides, and the deck,

and fastened by a key or burr on top. The deck may be formed of wood or cast-iron, with an aperture in the center in which the shaft can move without touching it.

L is the barrel or cylinder surrounding the shaft and shutting over a ring with a flange screwed fast to the deck, if the deck be of wood, or over a neck left for the purpose, if the deck be of cast-iron, and extending above the surface of the water, if the cistern, hereafter described, be open or is covered to the water-tight cover or head M, with a hole in it corresponding with the holes in the barrel L. The use of said barrel is to prevent the escape of water through the deck K or head M, where the shaft passes through them, and also to lessen the pressure of the water upon the deck K.

N is a cistern (represented in the drawing with one side off to show the wheel) made of staves and secured by hoops or bands if circular, and framed if square.

Operation: Water being admitted into the cistern from a mill-dam or reservoir, forces its way through the several sluices and acting at the same time equally upon all the buckets or vanes puts the wheel in motion, the power of which being equalized and strengthened by the weight of water pressing upon the plate F. The water having spent its force falls through the opening in the circular plate of the wheel and passes out under the floor upon the sheathing.

The guides are cast with a flange upon the outside of the upper and lower edges of sufficient width to receive the bolts by which the guides and the deck are secured to the floor, the flange having a projection or jog at the beginning of the sluice, which gradually diminishes till it reaches the point or end of the guide, its use being to receive a block in form of a wedge to conceal the bolt, give proper form to the sluice, and afford a resting-place for the gate to stop the sluice.

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

The use and application of a close chamber or cistern, in combination with the before-described water-wheel, in which the water is received and made to strike all the buckets of the wheel simultaneously before it passes out at the bottom, as herein described.

CHAPMAN WARNER.

Witnesses:

WM. P. ELLIOT,
WM. BISHOP.