W. H. Sears,

Water Wheel,

No. 52,082. Patented Jan. 16, 1866.

Fig. 1

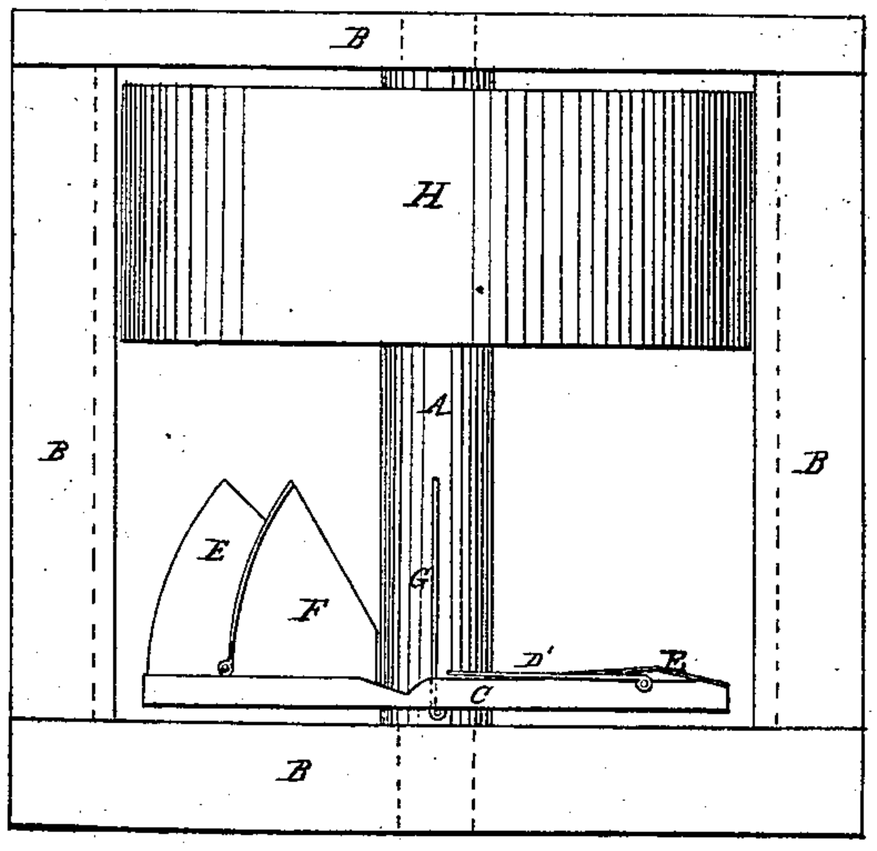


Fig 2

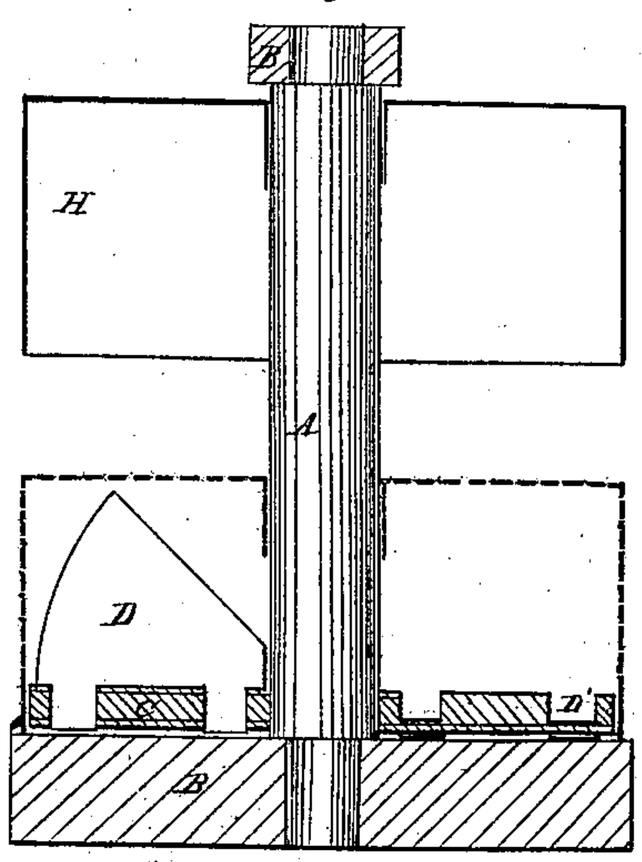


Fig. 3

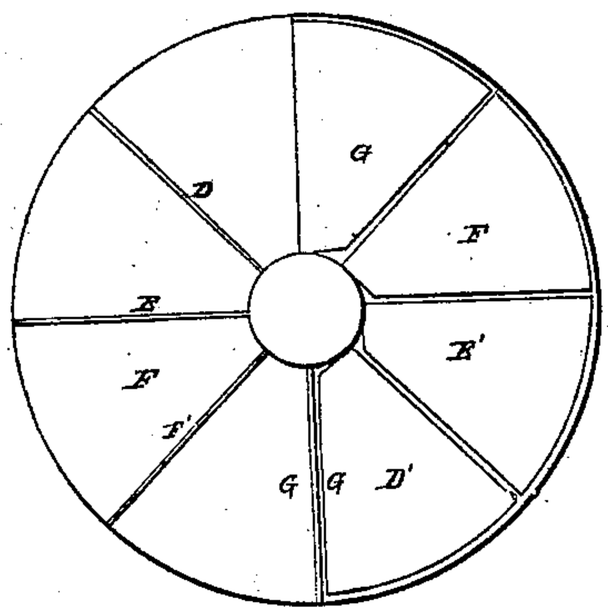
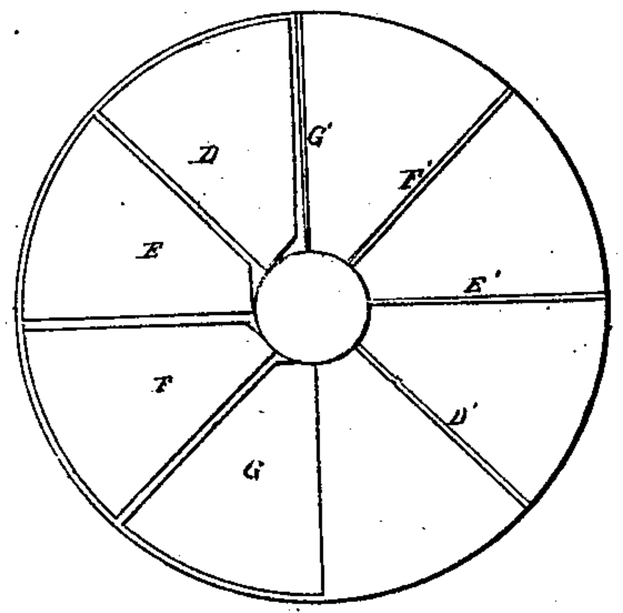


Fig. 4



Witnesses

Rufus A Sanford

John H Shumway

Wm H. Sears

by his att'y

John E Earle

UNITED STATES PATENT OFFICE.

WILLIAM H. SEARS, OF HAMDEN, CONNECTICUT.

IMPROVEMENT IN TIDE-WHEELS.

Specification forming part of Letters Patent No. **52,082**, dated January 16, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. SEARS, of Hamden, in the county of New Haven and State of Connecticut, have invented a new and Improved Tide-Wheel; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a vertical central section; Fig. 3, a top view of the wheel, the tide running a direction denoted by arrows; Fig. 4, a top view, the tide running in the opposite direction of that shown in Fig. 3.

My invention designed to produce a wheel which will revolve in a current of water and always in the same direction whatever may be the direction of the current, intended specially for a tide-wheel, yet will operate equally well in any running stream.

To enable others skilled in the art to construct and use my invention, I will proceed to describe the same as illustrated in the accompanying drawings.

A is a shaft placed perpendicular in a frame, B, its upper and lower ends supporting in proper bearings, so as to revolve freely therein. At the lower end of the said shaft I fix a plate, C, upon which the buckets are placed.

D D′ E E′, &c., (see Figs. 3 and 4,) are the buckets. Each pair—that is, D and D′, E and E′, &c.,—is fixed to a shaft, *a*, (see Fig. 2,) which shaft passes through the upright shaft, and arranged so that when the bucket D is raised the bucket D′ will lie flat, as seen in Fig. 2, or vice versa.

H is the gate, made in the form of a cylinder, so as to be raised up in the frame B, as from the position in red, Fig. 2, to that in black, to open gate, or down to the position in red to close the gate or stop the wheel.

When the gate is raised as denoted, Fig. 1, the tide or current running in the direction denoted in Fig. 3, the current will pass freely over the buckets G′, F′, E′, and D′ as they lie flat upon the wheel, while the buckets D, E, and F are raised, as seen in Fig. 1, against which the current bears, and will force the wheel to revolve until the current shall strike the bucket G upon the opposite side; then the bucket G will turn down, and the bucket G′, being attached thereto, will rise, the same current which acts to turn down the bucket G will act in the same direction to raise the bucket G′, and so on, the wheel revolving the buckets rising upon one side and turning down upon the other, the turn-down bucket serving to support the bucket turned up. When the current reverses, as denoted by the lines in Fig. 4, the movement of the buckets will be in the opposite direction—that is, the buckets raised will be upon the opposite side of the wheel to what they were when the current was in the opposite direction, as denoted in Fig. 3. Thus the same direction of revolution will be maintained whichever direction the current may be, the power of the wheel depending entirely upon the current, and not at all upon the weight of the water.

Power may be taken from the wheel in the usual manner.

Having therefore thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The combination of buckets D D′ E E′, more or less in number, and constructed and arranged to operate in the manner and for the purpose specified.

WM. H. SEARS.

Witnesses:
JOHN E. EARLE,
JOHN H. SHUMWAY.