E. R. PERCY.

Water-Wheels.

No. 141,074. Patented July 22, 1873.

Fig: 2.

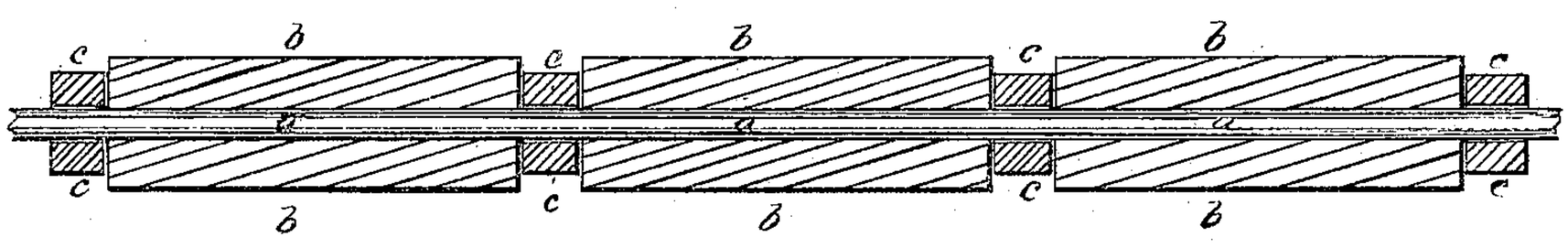


Fig: 1.

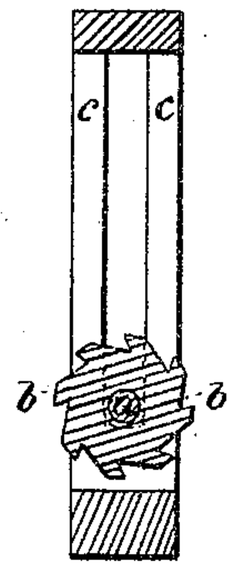
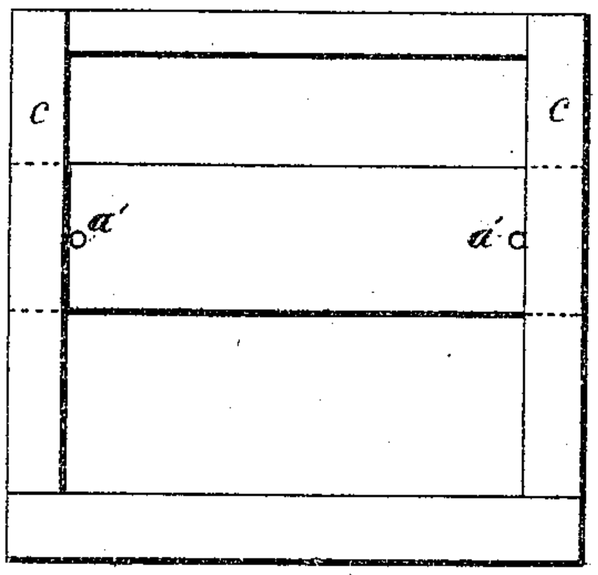


Fig: 3.



Witnesses

W. C. Brooks
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UNITED STATES PATENT OFFICE.

EDWARD R. PERCY, OF LAWRENCE, KANSAS.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **141,074**, dated July 22, 1873; application filed July 26, 1872.

To all whom it may concern:

Be it known that I, EDWARD R. PERCY, of Lawrence, in the county of Douglas and State of Kansas, have invented a Mode of Using Floating Water-Wheels, for the purpose of making available, in the production of mechanical power, any running water at all the varying depths caused by tides, freshets, or in any other way.

A floating water-wheel having a horizontal axis, around which it will revolve, sustained by the water, and not suspended by machinery, is revolved by the force of the current, and is retained in position by portions of its axis being brought into relation with upright posts, pillars, or columns erected for that purpose.

When there are only two upright posts, pillars, or columns erected, the water-wheel will revolve between them. If there be more than two uprights, then the water-wheel will be constructed in sections, united by a common shaft or axis, or united by gudgeons which connect together adjacent sections; and in these cases each section of the water-wheel will revolve between two of the uprights. In each of the uprights there will be a slot, for a portion of the axis of the water-wheel to work in, of sufficient length to answer the purpose required.

When only two uprights are used, then the projecting ends of the axis of the water-wheel revolve in the slots of said uprights, and slide up or down in said slots when the water-wheel is raised or lowered by the water upon which it rests; but if more than two uprights are used, then the water-wheel is made in sections, and in this case the projecting ends of its axis work in the slots of the outermost uprights, and those portions of its axis which connect the adjacent sections run through and work in the slots of the inner uprights.

When the water-wheel does not reach entirely across the running water, a "floating dam," placed at one end of the water-wheel, can be used by erecting uprights having slots in them of a suitable length. One end of said floating dam is placed as nearly as possible to the end of the water-wheel, and the other end is placed so that the line of the floating dam and that of the water-wheel form an angle greater or less, as shall be found to give the best result; the object of the floating dam being to prevent the water from running around the end of the water-wheel.

The floating dam is a structure which is sustained by the water, and not suspended by machinery. It will be constructed in one solid or hollow frame, or else made in sections, having pieces which connect together adjacent sections.

As an illustration of a floating dam, suppose a structure fifty feet long, eight feet wide, and one foot in thickness. Then the fifty feet would be the length of the dam; the eight feet its height, a portion of which would be below the surface of the water and the rest above it; the one foot would be its thickness. Those portions of the floating dam which come in contact with the said uprights will run in the abovementioned slots, and the floating dam will thus be retained in position, and will be raised or lowered by the rise or fall of the water on which it floats.

A floating dam at each end of the water-wheel will be used, if required, or, where the sections of the floating dam are hollow, one or two shafts running through said sections, to connect and hold them together; and in this case those portions of the shaft which are between adjacent sections are the parts which slide up and down in the slots of the uprights.

Where the water is always flowing in one direction we can dispense, if found desirable, with the slots in the uprights; and in such a case those portions of the axis of the water-wheel which heretofore have been described as working in the slots of the uprights will work up and down, and also revolve, on the faces of said uprights. The force of the current will keep the said portions of the axis of the water-wheel pressed against the faces of the said uprights.

Means involving the same principles will be used for revolving a floating water-wheel connected with a vessel anchored in running water. The projecting ends of the axis of said water-wheel will rotate in the slots of the uprights when the said water-wheel is revolved

by the force of the current, and said ends of said axis will slide up or down in said slots, according to the varying draft of the vessel. In this case the uprights are a part of, or are attached to, the vessel.

Figure 1 represents a view of the upright post and of the wheel in section. Fig. 2 represents a horizontal sectional view of the upright posts and of the wheel in sections or compartments. Fig. 3 represents a view of the floating dam.

a a a a a a a represent the shaft or axis of the water-wheel running through the slots of the upright *c c*, *c c*, *c c*, *c c*, *c c*. *c c* represent where there is a slot. *b b* represent one section or compartment of the water-wheel.

In Fig. 3, *a'* represents a square shaft, instead of the section of a circular one. The floating dam would need a square shaft or axis to prevent its being revolved by the action of the running water.

I claim—

1. A water-wheel having a horizontal axis, in combination with fixed upright posts, pillars, or columns, constructed, as described, so that the wheel will be sustained by the water alone, and caused to revolve in all the varying depths of the running water on which it floats.

2. In combination with the floating wheel and upright posts, the floating dam, as and for the purposes described.

EDWARD R. PERCY.

Witnesses:

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