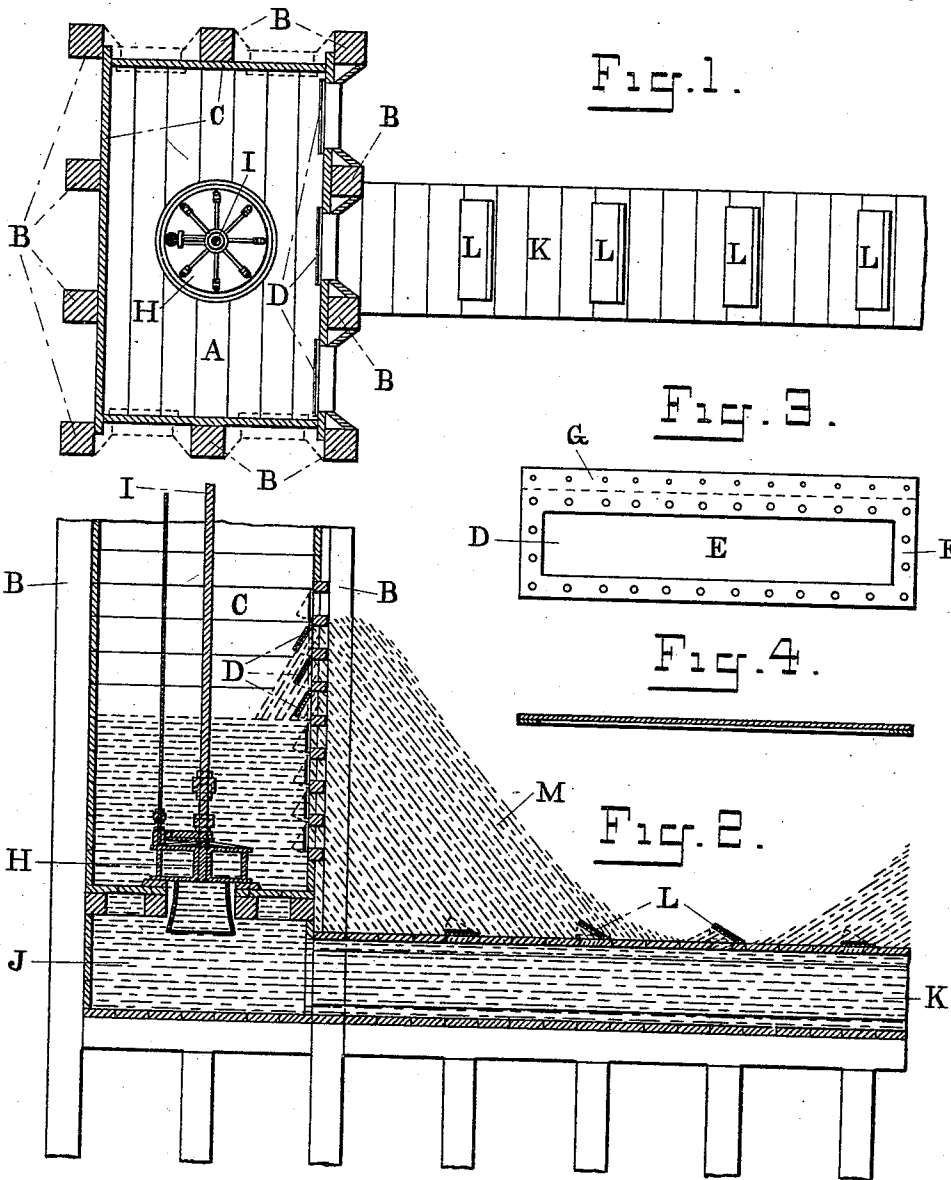


(No Model.)

C. A. MERRITT.
WAVE MOTOR.

No. 526,082.

Patented Sept. 18, 1894.



Witnesses

H. Alber

R. A. McAdory

Inventor

Charles A. Merritt

By his Attorney P. Dyfema

UNITED STATES PATENT OFFICE.

CHARLES ANDREW MERRITT, OF BIRMINGHAM, ALABAMA.

WAVE-MOTOR.

SPECIFICATION forming part of Letters Patent No. 526,082, dated September 18, 1894.

Application filed March 24, 1894. Serial No. 504,964. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ANDREW MERRITT, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Wave-Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of wave motors in which the water from the top of a wave is stored at the highest point of the wave as a head to operate a turbine wheel, and the objects of my improvements are, first, to provide a penstock or storage reservoir to be constructed in or adjoining a wharf to receive the water from the tops of the waves the penstock having free ingress for the water through a series of valves, the valves closing on the inside to retain the water when admitted; second, to provide a penstock of the above description with a turbine wheel to use as a motive power by which machinery can be driven on the wharf or top of the penstock for hoisting and other purposes required in the vicinity of wharves; third, to provide a tail race from the wheel for the escape of the water the race inclosed and extending at a right angle from the penstock and having a series of valves placed on the top side of the race opening outwardly to permit the water to escape and prevent an inflow of water from the outside. I attain these objects by the construction and arrangement of the device illustrated in the accompanying drawings, in which—

Figure 1, is a plan or top view of the penstock wheel and tail race, a portion of the top of the penstock removed or left off. Fig. 2, is a vertical sectional view of the same through the center. Fig. 3, is an enlarged detail plan view of one of the valves. Fig. 4, is a sectional view of the same through the center.

Similar letters refer to similar parts throughout the several views.

The penstock A is constructed by driving a series of piles B in the usual manner to form the frame of the penstock, the penstock can also be constructed on any suitable solid foundation, or in any of the breakwaters or

wharves now in use to form harbors. A series of the penstocks can be constructed adjoining to form a breakwater or wharf by themselves. The frame B is planked on the inside with heavy planking C, the planking secured to the framing timbers in a strong and substantial manner by any of the methods and means generally used for that purpose. A series of valves D is provided in the penstock. They are placed in the spaces between the frames and separated by suitable cross framing. The valves are made of a metallic backing E having a leather face F attached with rivets to the outer edge of the backing, the leather at one side extending outside the backing at G, the extension being used to secure the valve to place and to form a hinge for the valve to open and close. In the drawings the valves are only shown on one side of the penstock, but when desired to expose three sides to the action of the waves additional valves can be provided as shown by dotted lines, or if the penstock is built clear of a breakwater or wharf, all four sides as exposed can be provided with valves.

The turbine wheel H can be of any of the usual forms of turbines having a vertical shaft I to communicate motion by any of the usual appliances to the machinery intended to be operated by the device. In the drawings the connecting wheels or operating machinery is not shown, as no special form is described, or invention claimed.

In the framing of the penstock under the wheel, a chamber J is constructed, planked or inclosed on all sides to keep the outside water from entering; the chamber J is provided with a tail race K extending in the water to any desired distance; the tail race is secured to any form of rigid foundation, and the top of the tail race placed about even with the top of the water when calm. The race is provided on the top side with a series of valves L opening on the outside to allow the water from the race to escape. The valves are made in the same manner as described to the penstock. They are attached to cover openings formed on the top of the race, and made to close by the advance of the waves in the direction of the penstock.

It is obvious that the water M when agitated by the wind will rise against the outside of

the penstock in waves as shown and dashing against the valves D will open them to admit a portion of the water to enter the penstock. When the wave recedes the closing of the valves will retain the water at a higher head to operate the turbine than the water on the outside, a portion of the valves in the tail race being always exposed in the trough of the waves will allow the water from the race to escape, thereby operating the turbine with the head of water maintained in the penstock.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a wave motor, the combination of a penstock secured to a suitable foundation at a

lake or the sea the penstock provided with a turbine wheel, a series of metallic valves faced with leather the valves secured to cross framing between the upright timbers of the penstock, an inclosed tail race extending from an inclosed chamber under the wheel, the tailrace having a series of metallic valves faced with leather placed over openings in the upper side of the tail race, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES ANDREW MERRITT.

Witnesses:

S. L. WEAVER,

J. W. TAYLOR.