No. 630,006. Patented Aug. 1, 1899.

J. ROGOWSKI.

WAVE POWER WATER MOVING APPARATUS.

(Application filed Oct. 18, 1898.)

(No Model.)

Fig. 1.

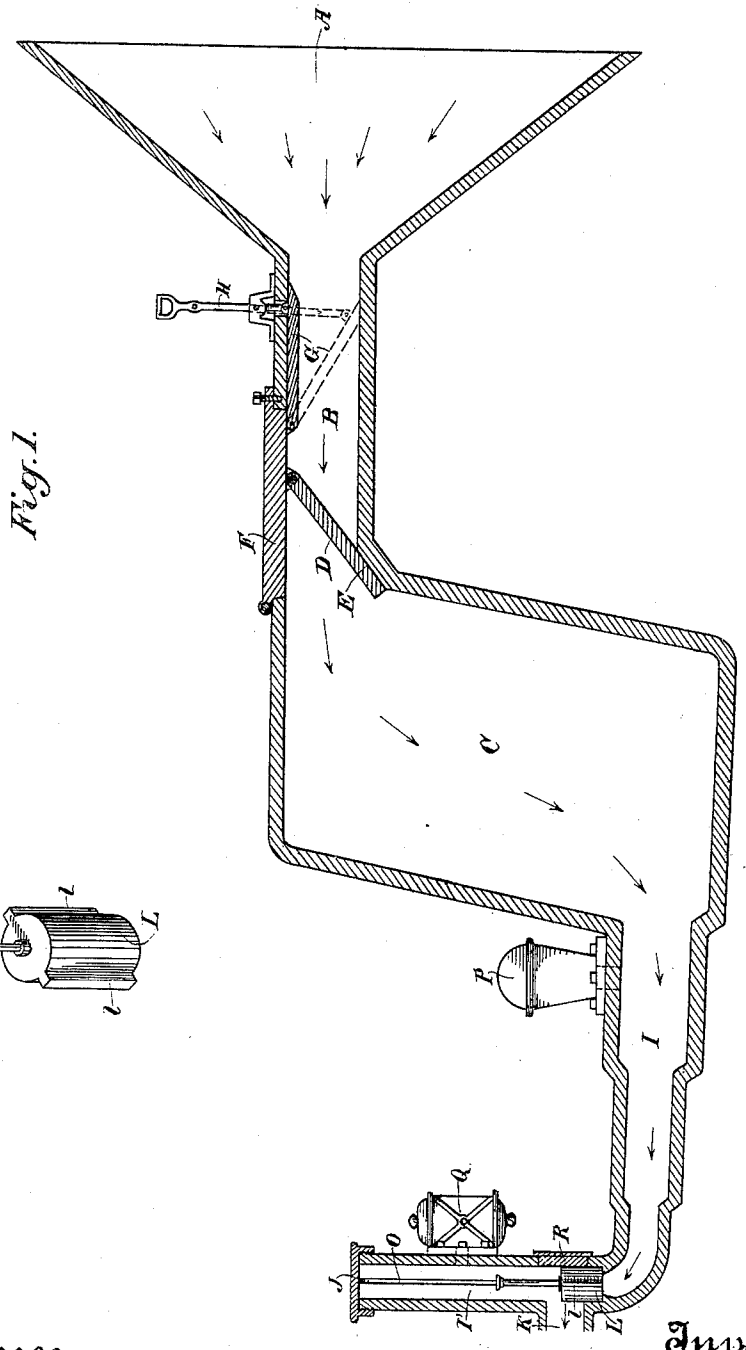


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN ROGOWSKI, OF SAN FRANCISCO, CALIFORNIA.

WAVE-POWER WATER-MOVING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 630,006, dated August 1, 1899.

Application filed October 18, 1898. Serial No. 693,879. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROGOWSKI, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Wave-Power Water-Moving Devices and Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device and apparatus which is especially designed to furnish a supply of water through the action of waves upon the sea-coast.

My invention consists in the parts and the constructions and combinations of parts hereinafter described and claimed.

Figure 1 is a vertical longitudinal section through my apparatus. Fig. 2 is a detail of the cylindrical valve.

A is the funnel-shaped mouth of the apparatus, and it is mounted at such a point that the waves will rush into it as each one rises in that direction, and it is so constructed that the mouth will be considerably larger than the rear or contracted end, so that waves striking in the mouth of the funnel will be concentrated into the contracted portion, from which the water is carried through a passage B and delivered into the upper part of the reservoir or chamber C, which is disposed with relation to the channel as shown. In order to control the supply of water to this reservoir or chamber and to prevent its return after it has entered, I have shown a hinged flap-valve D, one edge of which is hinged in the upper part of the channel B and the other edge falls by gravitation, resting upon an incline E, which is in line with the hinged valve, so that the movable end may lie upon this surface and form a close to prevent the return of water through the pipe or passage B. Whenever the water dashes into this passage, it will lift the valve D and pass into the chamber C, the valve D closing immediately after the rush of inflowing water has ceased. If for any reason it is desired to obtain access to this valve for repairs or other purposes, it is effected by means of a gate or door F, fitted in the top of the passage B above the valve D, this door having a suitable hinge at one side and a locking and holding device at the other. When it is desired to obtain access to this valve or to other parts of the apparatus or for other reasons to close the water-supply temporarily, it is effected by means of a gate or valve G, which may be hinged and operated by a shank H, connected with its movable end, or it may be in the form of the well-known vertically-movable water-gate. In either case it is fitted to the passage B exterior to the automatic valve D and when closed prevents any ingress of water.

From the lower part of the chamber C a passage I extends, being, as here shown, made in constantly-diminishing sections from the chamber C to a point where it is upturned, extending thence vertically upward, as shown at I'. This pipe I' is closed at the top by a suitable cap J, and at the side of the passage I', at a point near the bottom, a conducting-pipe K connects with it, and through this the surplus of water supplied into and through the chamber C is constantly delivered in impulses depending upon the action of the exterior waves.

L is a cylindrical valve which reciprocates within the vertical pipe or passage I'. This valve has wings *l* upon opposite sides, and these guides travel in corresponding slots or channels O, made in the sides of the vertical chamber I', thus causing the valve to rise and fall and maintain its proper position. This valve is of sufficient length so that when it is at the bottom of its travel it lies across the passage K and forms a stop or check valve to prevent the return of water which has once been forced into this passage. The guide-slots O terminate at a point just below the pipe, and thus form a stop in which the guides *l* are arrested when the valve reaches the bottom of its travel. The valve may move upwardly as far as the length of the pipe or the closed top or a cushion therein will admit and is constantly forced up by the ingress of water and falls by gravitation when the pressure subsides.

P is an air-chamber which steadies and regulates the movement of the water from the chamber C through the pipe I, and Q is another air-chamber connecting with the side of the vertical pipe I' at a point above the line of discharge-pipe K.

By means of a door or gate R, formed in the

side of the vertical pipe I′ and approximately opposite the passage K, the valve L can be easily reached at any time when desired.

The apparatus forms a simple and effective water-supply which is kept in almost constant operation by the flow and impulse of the waves.

My apparatus may be built of any suitable materials and in any manner of shape and of any size chamber or reservoir. My apparatus is especially adapted for flat sea-coasts. It cannot be operated on cliffs or rocks.

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

1. An apparatus for concentrating and conducting water consisting of a pipe having a funnel mouth or opening toward the sea, an automatic check-valve preventing the return of water through the pipe, a chamber-reservoir of larger dimensions into the upper part of which the pipe discharges, a second pipe connecting with the lower part of the chamber having an upturned vertical section with guides and a vertically-reciprocating valve therein and a discharge-pipe leading from the vertical section and across the mouth of which the valve closes to prevent the return of water therethrough.

2. In an apparatus for storing and conducting water, a wide-mouthed funnel opening toward the sea, a horizontal pipe connecting with the contracted end of the funnel having an inwardly-opening check-valve and a manually-operated gate, a chamber or reservoir of larger dimensions into the upper part of which said pipe discharges, a pipe connecting with the bottom of the chamber or reservoir and diminishing outwardly therefrom, a vertical pipe connected with the outer end of the diminishing pipe having guides formed in its sides, a valve having wings movable in said guides, a pipe opening horizontally from the vertical valve-carrying pipe, said valve adapted to stand normally across the mouth of the discharge-pipe to which it acts as a check and movable to expose said pipe for the ingress of water from the chamber by the impulses of the water delivered thereto from the sea.

3. In an apparatus for concentrating and conducting water, the combination of a reservoir or chamber, a pipe leading into the upper portion thereof and having a funnel-shaped mouth or opening toward the sea, a pipe leading from the lower portion of the reservoir or chamber, a check-valve in the first-named pipe and a valve or gate in advance of said check-valve, a discharge-pipe connecting with the second-named pipe and a valve controlling the admission of water to said discharge-pipe.

In witness whereof I have hereunto set my hand.

JOHN ROGOWSKI.

Witnesses:
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