

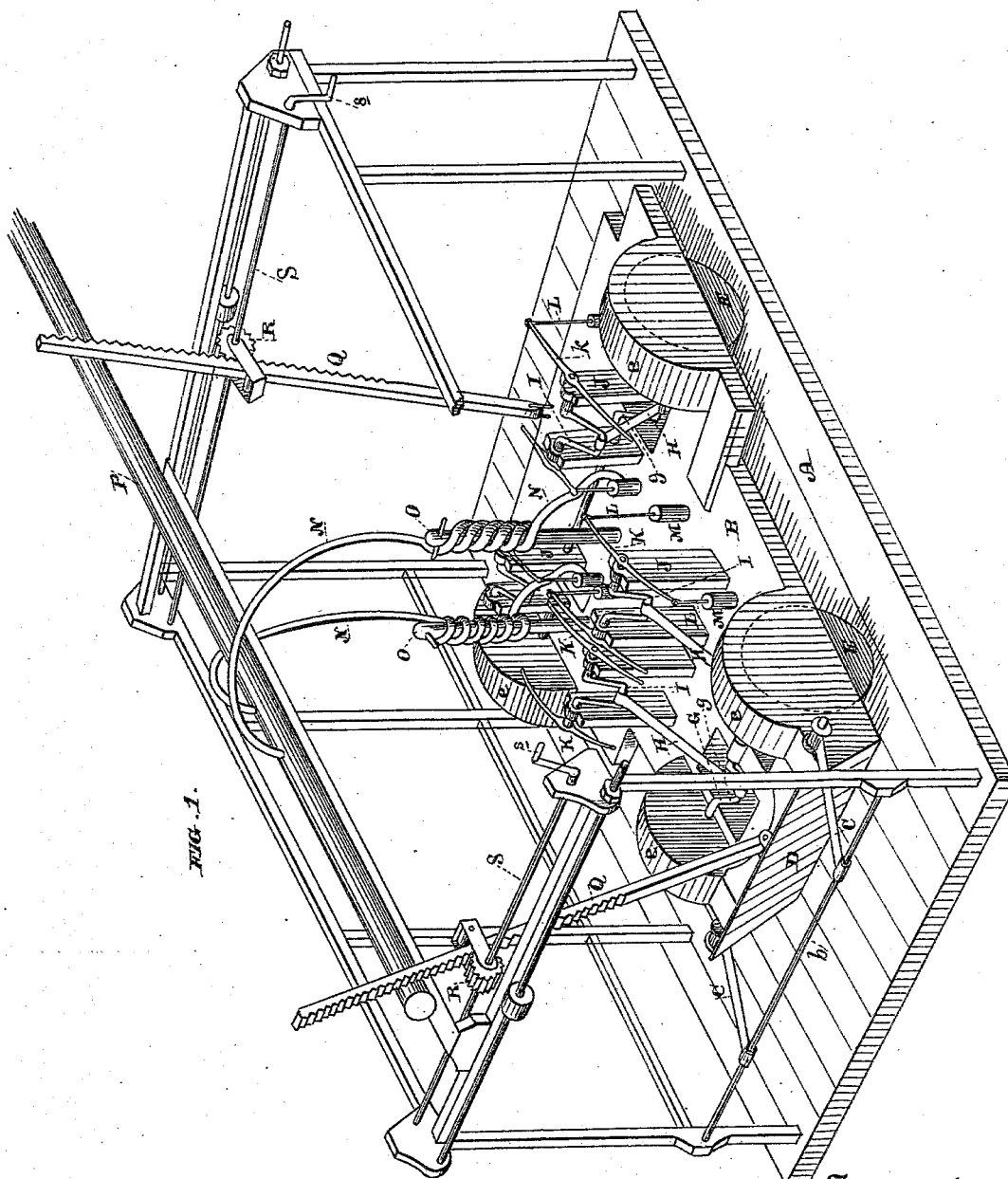
(No Model.)

2 Sheets—Sheet 1.

W. FILMER.
WAVE POWER.

No. 303,143.

Patented Aug. 5, 1884.



Witnesses,
Geo. H. Strong.
J. H. Young

Inventor
H^m Filmer
By Deane & Co
attorneys

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

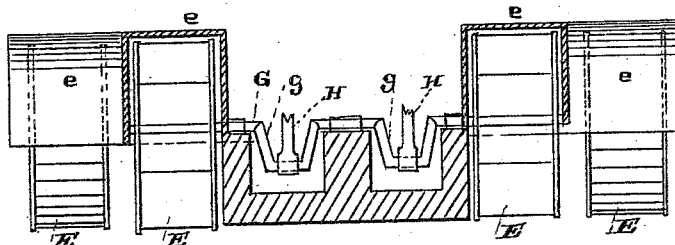
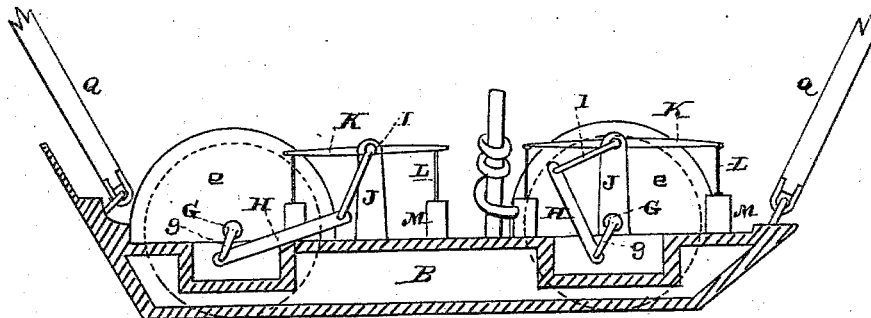


FIG. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM FILMER, OF SAN FRANCISCO, CALIFORNIA.

WAVE-POWER.

SPECIFICATION forming part of Letters Patent No. 303,143, dated August 5, 1884.

Application filed November 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FILMER, of the city and county of San Francisco, and State of California, have invented an Improvement in Wave-Power; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful machine or device for utilizing the power of the waves or breakers on the sea-coast, or at any point where waves can operate the same.

My invention herein is an improvement upon and supplements my former invention, which was secured to me by Letters Patent of the United States No. 209,391, dated October 29, 1878.

My invention consists in a novel construction of the float, adapting it to take advantage of the impact or blow of the wave, and in various improvements in the gearing and intermediate devices whereby the motion of the wheels of the float is transmitted to suitable machinery.

The object of my invention is to provide means for utilizing the entire power of the waves.

Referring to the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a transverse vertical section. Fig. 3 is a longitudinal vertical section.

A represents, generally, a frame of wood or other suitable material, which is placed on the sea-shore and is made fast.

B is the float, connected with a cross-bar, *b*, of the frame by means of links or arms C, which allow free motion to the float in its rise and fall with the waves. The float B is peculiarly constructed, having a face-plate, D, to provide for its rise with the wave, and wheels E, mounted in its sides and constructed upon the principle of paddle-wheels. These it is found desirable to partially inclose by casings *e*, open below to allow the wave to strike the blades of the wheels, and the face-plate is also cut away on each side for a similar purpose with regard to the front wheels.

Of course I may arrange the wheels E in any suitable manner upon the float which I see fit; and I have herein shown the float widened in its back portion to afford bearings for mounting the rear wheels in planes out-

side the front ones, whereby one will not interfere with another. The shafts G of the wheels, upon which they are rigidly secured, are provided with cranks *g*, with which connecting bars or rods H are joined. The other ends of these rods are connected with cranks I, mounted in the tops of bearings J, and which operate levers K, to oscillate them after the manner of a walking-beam. These levers are connected with the pitmen L of pumps M, extending downward through the float, and adapted to suck water from below. With the pumps are connected stout flexible discharge-tubes N, wound around standards O for a short distance to get them out of the way of the working parts on the float, and then slackened to provide for the vertical play of the float. They extend upward and discharge into a pipe, P, on top of the frame, which may be supposed to run inland and connect with a suitable reservoir at any desired height. The revolution, partial or complete, of the wheels E revolves the cranks *g*, which, through the rods H, oscillate cranks I and the levers K to operate the pumps, which discharge their water through tubes N and pipe P into the reservoir, whence it may be drawn as water under head or pressure to accomplish any desirable result.

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

1. In a wave-power, a float secured in position to oppose the advancing wave, said float having wheels adapted to receive the impact of the wave, and to be revolved partially or completely thereby, and suitable devices for the communication of power from the motion of said float and its wheels, consisting of the shaft G, cranks *g* and I, and connecting-rods H, substantially as herein described.

2. In a wave-power, the float B, having the wheels E opposing the advancing wave to receive its impact, in combination with the wheel-shafts G, having cranks *g*, and suitable devices, consisting of the connecting-rods H and the oscillating levers K, connected with said cranks, for the communication of power, substantially as herein described.

3. In a wave-power, the float B, having the wheels E opposing the advancing wave to re-

ceive its impact, in combination with the wheel-shafts G, having cranks g, the connecting-rods H, the cranks I, oscillating levers K, and pump mechanism operated by said levers, substantially as herein described.

4. In a wave-power, the float B, having wheels E, adapted to receive the impact of the wave, in combination with the wheel-shafts G, having cranks g, the connecting-rods H, the
10 cranks I, oscillating levers K, pumps M, op-

erated by said levers, the flexible discharge-tubes N, and pipe P above, all arranged and operating substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM FILMER.

Witnesses:

S. H. NOURSE,
J. H. BLOOD.