

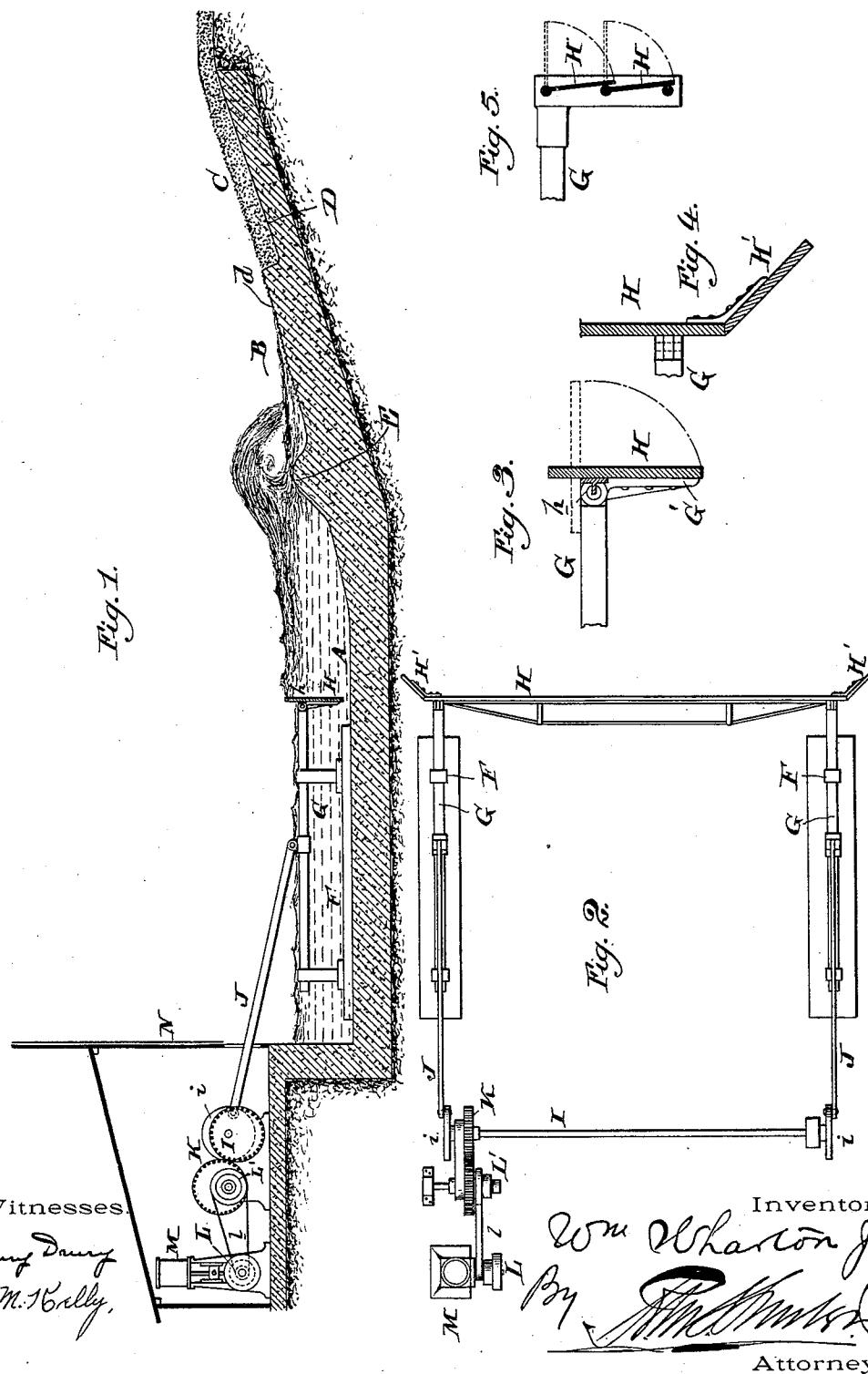
(No Model.)

2 Sheets—Sheet 1.

W. WHARTON, Jr.
AMUSEMENT APPARATUS.

No. 586,983.

Patented July 27, 1897.



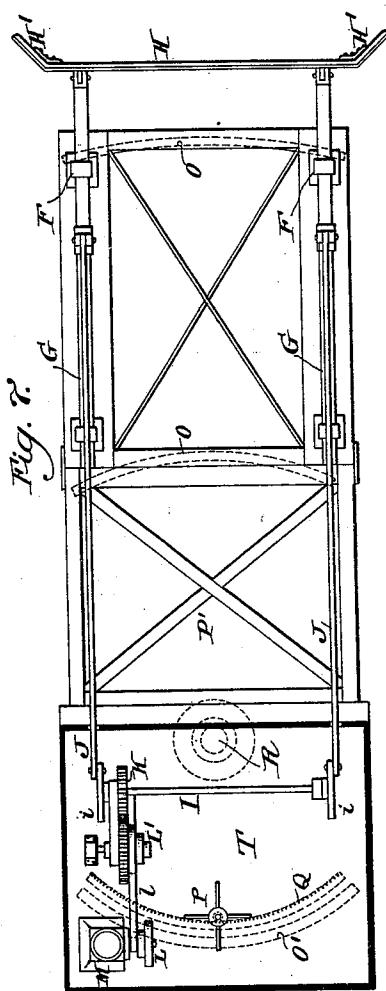
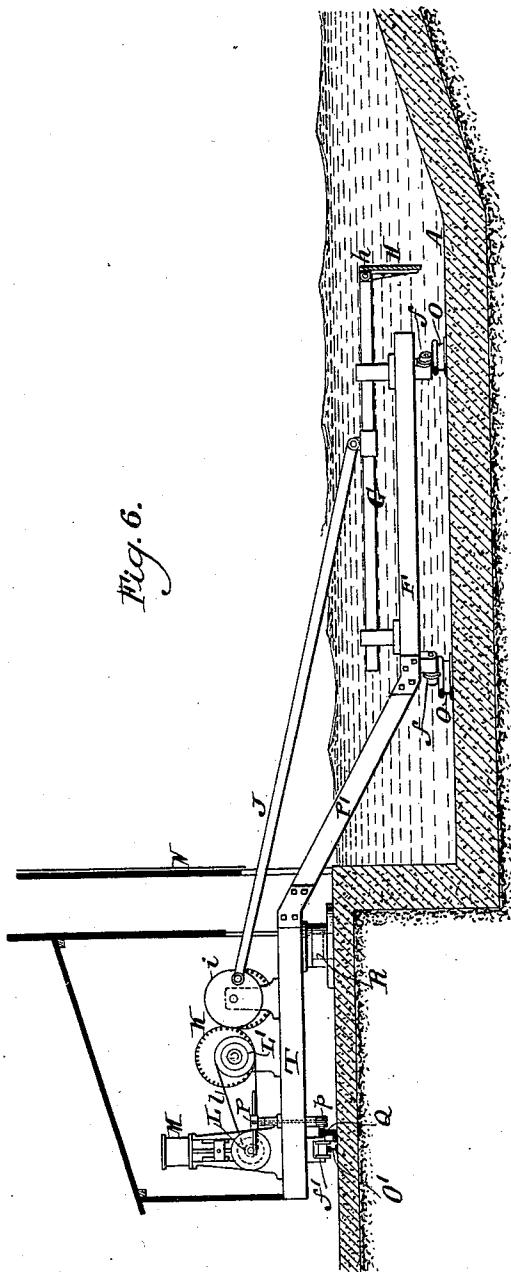
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Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

AMUSEMENT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 586,983, dated July 27, 1897.

Application filed December 22, 1896. Serial No. 616,631. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHARTON, Jr., of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Amusement Apparatus, of which the following is a specification.

My invention has reference to amusement apparatus especially designed to represent with realistic effect an ocean beach; and it 10 consists of a tank or pond of considerable dimensions having a sloping beach or side and adapted to contain water and certain devices or apparatus used in connection therewith, as hereinafter set forth. The sloping 15 beach I prefer to cover partially with concrete and partially with sand and pebbles. The deeper portion of the pond or tank is provided with artificial means for creating a great commotion in the water, preferably in 20 the form of a reciprocating feathering blade or blades, which force the water toward the beach in a succession of waves or movements.

I prefer to arrange the actuating power 25 machinery above the level of the water in the tank or pond and to connect it in a suitable manner to reciprocate or operate the wave-producers, of which there may be one or any other number desired. I prefer to operate the power devices in such a manner that provision 30 is made for varying the speed of operation and also for varying the action of the pushers or blades, so that the forward motion in producing the waves is more rapid than the receding or backward motion, or 35 vice versa, and also for varying the speed of the pushers at different portions of their forward stroke.

It is desirable to pivot the wave-producing 40 apparatus so that the waves may be propelled in different directions at different times and so that in the case of more than one wave-producing apparatus the waves may be made to cross or intercept each other. In this way a much greater variety of action 45 and effect can be produced than would be possible with stationary or fixed apparatus.

If desired, a painted scene may be arranged at the distant side of the tank or pond, with a representation of the ocean at the lower 50 part and blending into the sky at the top, so as to heighten the realistic effects. Suitable provision would be had for systematically

changing the water, as is customary in any swimming-tank, where it is necessary to keep the water in a pure condition.

My invention will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved apparatus. Fig. 2 is a plan view of 60 the wave-producing device. Fig. 3 is a sectional elevation through the wave-board and its support. Fig. 4 is a sectional plan view through one end of same. Fig. 5 is a sectional elevation of a modification of the wave- 65 board. Fig. 6 is a sectional elevation of wave-producing apparatus when pivoted, and Fig. 7 is a plan view of same.

A represents a tank or pond of any suitable construction, but preferably formed of 70 concrete. At one side I arrange a sloping beach B, which may be provided with a pocket D, into which sand C is placed. The pocket thus holds the sand and presents an upper surface like a sand beach. The inclined surface of the concrete adjacent to the sand is made rough, as at d, so that the joining of the concrete with the sand shall be made as indistinct as possible.

In practice a portion of the sand will work 80 down over the roughened surface, making the sand beach appear to be continuous to the bottom.

At a suitable place on the floor or on the inclined side is a hump or raised portion E, 85 extending along the beach under the water. This obstruction retards the under part of a wave and allows the upper part to continue on its course and to comb or fall over toward the beach onto the concrete surface d and 90 to run up onto the sand beach, thus producing the action and effect of actual ocean-breakers. By having the bottom and sides and especially the inclined or beach side of the tank or pond made of concrete there can 95 be no wearing away or washing out of the same by the motion and dashing of the waves and breakers. This prevention of the washing out or wearing away of the beach is of the utmost importance to the safety of bathers, 100 who can thus enjoy the pleasure and benefit of artificial surf-bathing upon a safe and permanent sloping beach with no holes or depressions in it to cause danger of their drowning.

The beach may be of such length as practicable and desirable. It should probably be at least six hundred feet in length and at least two hundred feet distant from the wave-producers.

Situated at or near the side of the pond opposite to the beach are frames F, in which are guided tubes or rods G, connected at their outer ends by a cross-bar, to which rods are pivoted at *h* the feathering wave-board H. Downwardly-projecting feet G' may be employed to limit the backward movement of the wave-board when it assumes a vertical position, as shown in Fig. 3. The ends of the wave-board H may be formed angular, as at H', so as to provide sides which insure the water being pushed forward and prevent its ready escape laterally. This is clearly shown in Figs. 2 and 4.

The wave-board may be braced or formed in any suitable manner to impart the necessary strength.

In place of using a single wave-board two or more pivoted feathering-blades may be used in a suitable frame, as indicated in Fig. 5, the principle of operation being the same. It will now be understood that as the wave-board is thrust forward toward the beach it pushes the water forward with great power, causing it to assume a wave motion and break upon the beach. When the wave-board recedes, it moves about the hinge *h* and is pulled edgewise backward without affecting the water. While the forward and backward motion may be uniform as to speed, I prefer to make the forward motion more rapid than the backward or receding motion. The power devices for operating the wave-producing board may be made in a variety of ways, one suitable construction being illustrated. Upon the ends of a horizontal shaft I are arranged cranks *i*, which connect with the reciprocating tubular rods G by connecting-rods J. An engine M, of any construction, or other power device operates a cone-wheel L, and this transmits power by a belt or chain *l* to a second cone-wheel L'. By changing the adjustment of the chain or band *l* on the cones L and L' the wave-board may be driven at a higher or lower number of strokes per minute. The cone-wheel L' is connected to the shaft I by means of cam-gear K, so arranged that a variable speed of rotation is produced in the shaft I from a uniform speed of rotation of the cone-wheel L'. Other means may be employed for producing this variable speed of rotation.

By properly adjusting the cam-gear K a rapid forward motion of the wave-producing board and a slow return motion thereof can be obtained. With another adjustment of the cam-gear the wave-producing board will be moved slowly at the commencement of its forward stroke, and with its speed gradually increasing as it moves onward it will near the end of the forward stroke project the water with considerable impetus toward the in-

clined beach. By thus at the beginning of the forward stroke pushing very gently against the water and then gradually accelerating the speed of the push there is but little frothing or churning of the water and the tendency of the water to escape sidewise is much diminished.

It is to be understood that the particular minor details of construction are immaterial and may be greatly varied without departing from the spirit of the invention.

Referring to Figs. 6 and 7, we have the same general construction of wave-producing devices as shown in Figs. 1 and 2, with the exception that in this case they are pivoted in such a manner as to exert their influence on the water in the tank or pond in different directions when shifted for that purpose. More particularly referring to the construction here shown, we have the power devices supported upon a pivoted platform or frame T, pivoted at R and connected by a downwardly-extending frame P' with the frame F, which directly supports the wave-producing devices. In this case the wave-producing devices proper are sustained by rollers *f* upon curved tracks O, arranged upon the bottom of the tank. If the weight of the power devices is very great, the platform T also may be sustained by rollers *f'*, running on the track O'.

To produce a rotary or oscillating motion to the wave-producing devices, I may employ the following mechanism: A curved rack Q is secured to the ground or foundation below the platform T, which latter is provided with a pinion *p*, meshing with the rack Q, and a turnstile device P to rotate the pinion. It is of course evident that any suitable device may be employed to cause the oscillation of the wave-producing devices in lieu of that shown.

With the mechanism shown it is evident that the waves may be projected in various directions and that by employing two or more of the devices shown in Figs. 6 and 7 at different parts of the same tank or pond and properly adjusting them the waves may be made to intercept and produce large disturbances. It is of course evident that any number of these apparatus may be arranged along the tank or pond and a great variety of effect be obtained.

The construction herein illustrated, while being excellently adapted to the purpose, may be largely modified while still maintaining the same general principles of construction and embodying the essential features of my improvements.

N is an upright scene, preferably representing an ocean view, behind which the power devices may be placed.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an artificial beach, a tank or pond filled with water and having an inclined side of small grade extending a distance below

and above the water-level, in combination with power-driven wave-producing apparatus arranged in the tank or pond at a distance from and in front of the inclined side and

5 adapted to force a succession of waves or motions of the water toward and up the inclined side to form breakers while permitting a person to walk down the inclined side.

2. A tank or pond provided with a sloping 10 or inclined side formed of concrete or other artificial solid material having a shoulder approximately on a level with the water in the tank or pond and also furnished with a beach of sand or pebbles or both joining up to the 15 shoulder of said solid artificial material and extending higher up the shore, in combination with power-driven wave-producing apparatus adapted to produce a motion of the water toward and cause it to break in breakers upon the said inclined side and beach.

3. A tank or pond provided with a sloping or inclined side extending above the water-level and also provided with a raised portion or obstruction at the lower part of and parallel to the length of the sloping or inclined side so as to be under the water-level adapted to retard the under part of a wave and to cause the upper part thereof simultaneously to comb or fall over, in combination with 25 wave-producing apparatus arranged in the tank or pond adapted to produce a motion of the water toward the said obstruction and inclined or sloping side.

4. The combination of a tank or pond having an inclined beach extending from below to a distance above the water-level in said tank or pond, reciprocating wave-producing power apparatus adapted to force the water toward and up the inclined beach, power devices for actuating said wave-producing apparatus, and means for increasing or diminishing the speed of reciprocation of the said wave-producing apparatus.

5. The combination of a tank or pond having an inclined beach extending from below to a distance above the water-level, wave-producing apparatus adapted to force the water toward and up the inclined beach, consisting 45 of a reciprocating feathering-board and power devices for actuating said board, and means

for making the speed or velocity of the forward motion of the feathering-board faster than the speed or velocity of its receding motion.

6. The combination of a tank or pond having a sloping beach at one side extending from below to above the water-level, a long feathering-board arranged below the water, longitudinal guides for the feathering-board, and power devices acting upon each end of the 55 board adjacent to its guides for imparting a simultaneous reciprocation.

7. An inclined beach formed of concrete or other artificial material with a recess or pocket at its upper portion and provided with a 60 beach of sand or pebbles, or both, supported in the said pocket, in combination with power-driven wave-producing apparatus adapted to produce a motion of the water toward the said beach.

8. The combination of an inclined beach, wave-producing apparatus adapted to force the water toward and up the said beach, and means for rotating or oscillating the wave-producing apparatus so as to project the 65 water in different directions at different times as may be desired.

9. The combination of a tank or pond having an inclined beach, wave-producing apparatus adapted to propel the water toward the 80 said beach consisting of a long reciprocating feathering-board H provided with sides H' H', longitudinal guides for said board, and power devices operating upon each end of said board for reciprocating it horizontally.

10. The combination of a tank or pond having a long raised obstruction parallel to its side and below the water-level, a wave-producing device consisting of a long feathering-board arranged parallel to the obstruction, and power devices for reciprocating the feathering-board to or from the obstruction to cause the waves produced to be forced upward and comb or break into artificial breakers.

In testimony of which invention I have 95 hereunto set my hand.

WM. WHARTON, JR.

Witnesses:

J. W. KENWORTHY,
ERNEST HOWARD HUNTER.