Jan. 10, 1928. 1,655,498

W. FISCH

BATHING AMUSEMENT APPARATUS

Filed April 8, 1927 3 Sheets-Sheet 1

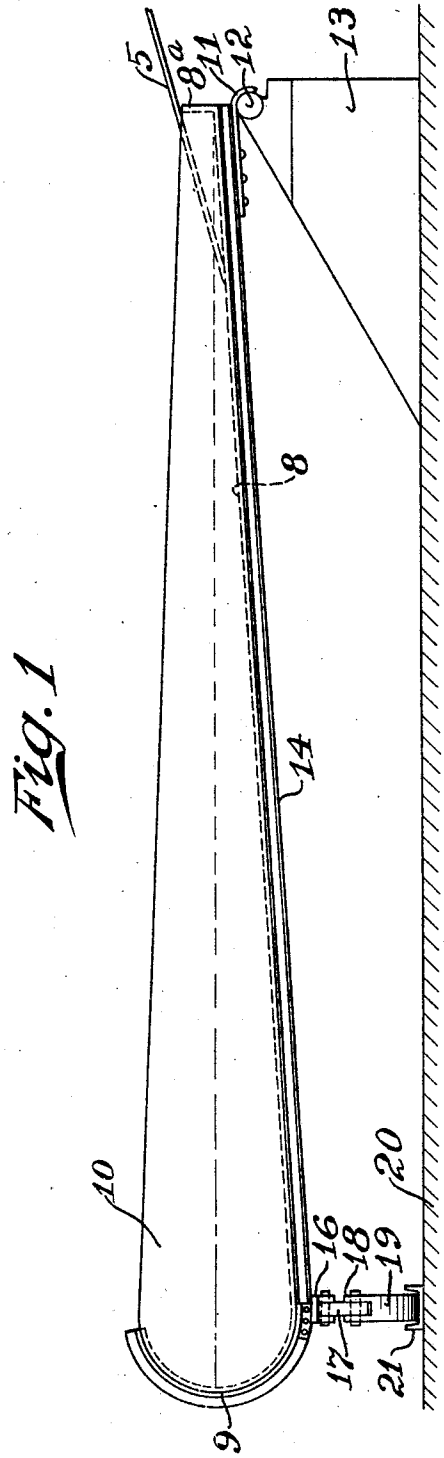

Fig. 1

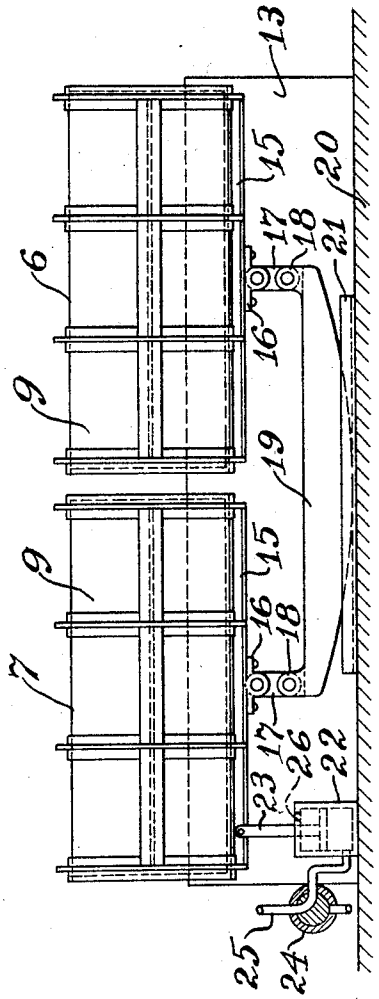

Fig. 2

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Fig. 3

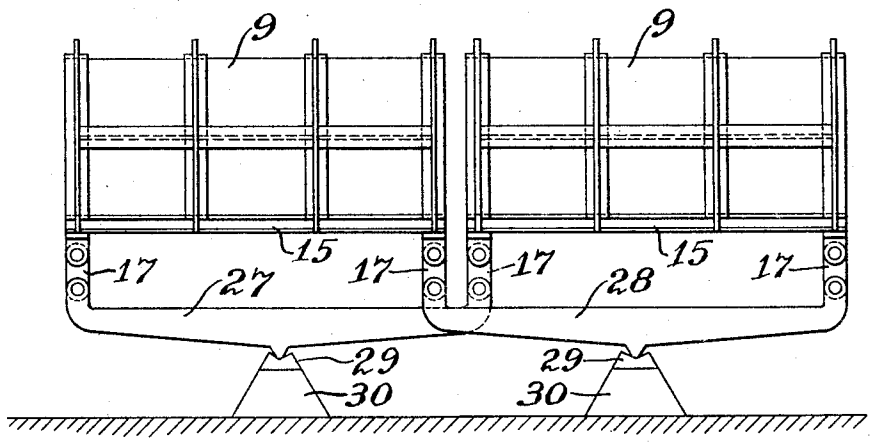
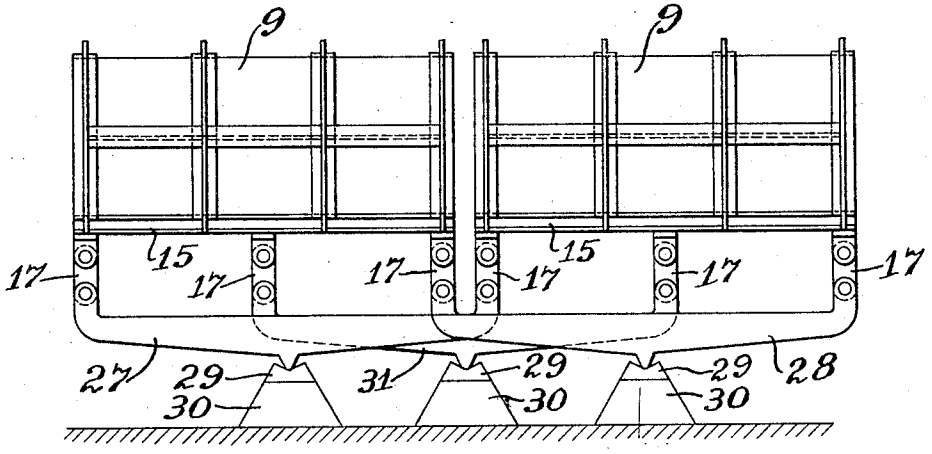


Fig. 4



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BATHING AMUSEMENT APPARATUS

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Fig. 5

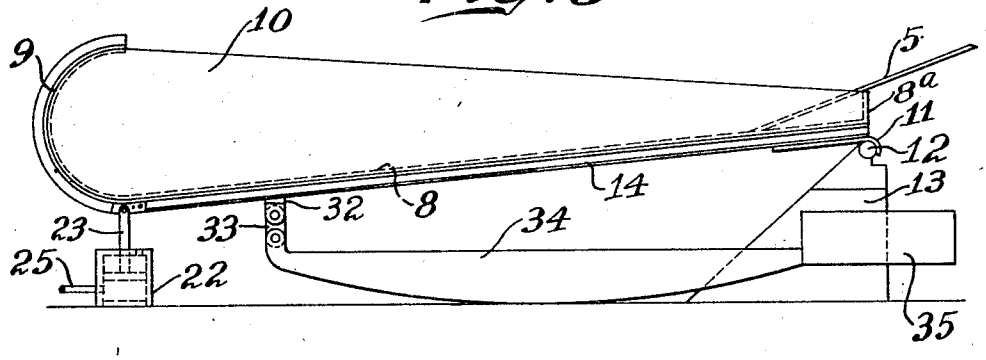
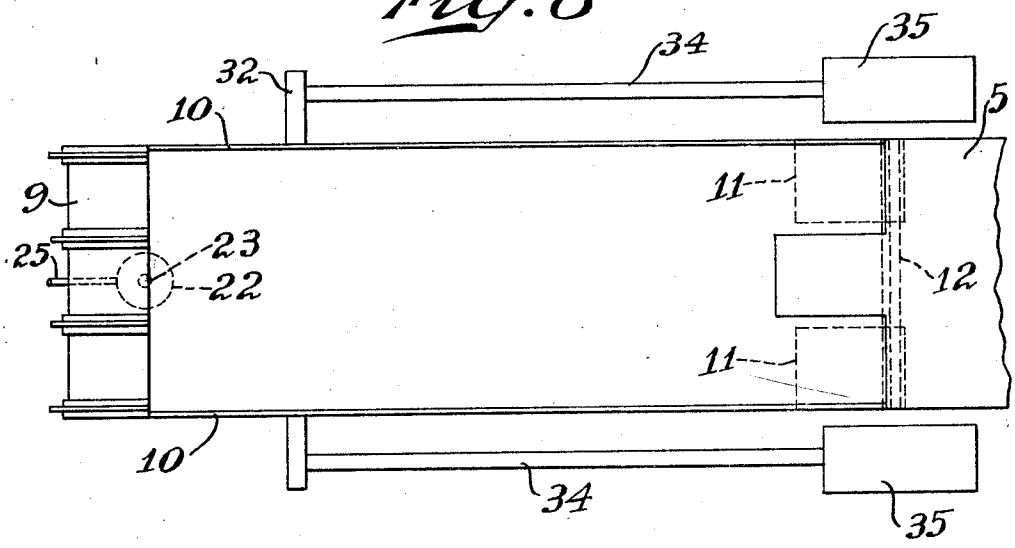


Fig. 6



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Patented Jan. 10, 1928. 1,655,498

UNITED STATES PATENT OFFICE.

WILLIAM FISCH, OF ATLANTA, GEORGIA.

BATHING AMUSEMENT APPARATUS.

Application filed April 8, 1927. Serial No. 182,168.

My present invention has relation to amusement apparatus of a character in which large public bathing pools are designed and mounted for movement and adapted, by the resulting displacement of water therein, to produce the effect of surf to enhance thereby the attractiveness of bathing.

In other pending applications I have described various constructions of bathing pools adapted to have angular movements in a vertical plane upon fixed or rolling fulcrums and have shown them equipped with suitable means to convert the rush of water towards the lowered marginal wall of the pool into a curling wave which breaks like surf over the bathers, and with power means co-acting with the displacement of water back and forth in the rocking pool to maintain the latter in constant motion with but small expenditure of energy. In all such arrangements it was essential, to reduce the power factor, that the fulcrum of the pool be near its center of gravity and this resulted in substantial vertical movement for both ends of the pool.

One object of my present invention is to devise an amusement apparatus employing one or more bathing pools which are each adapted to rock about an end axis on a counter balance having a rolling or fixed fulcrum so that only a very small amount of power applied there will produce and maintain the desired rocking movements of the pool or pools requisite for the production of the surf effect. The advantage of this arrangement is that the pool can be adapted to rock about an axis at its shallow end so the bathers may walk from the ground or stationary platform onto a gradually descending pool bottom to the desired depth and thus the naturalness of the bathing is enhanched to the highest degree, especially when the rush of water towards the deeper end of the tank as it is lowered produces there the effect of surf. Where a plurality of pools are grouped together they may be used to counterbalance each other with a see-saw effect and the opposite movements of the juxtaposed pools will also tend to heighten the attractiveness of the apparatus as a whole.

A further object of my invention is to simplify the counterbalancing means for pools which counterbalance each other by the provision of a plurality of rocket supports capable of operating on either a fixed or rolling fulcrum and each co-acting at corresponding point with reinforcing elements under the two tanks, whereby cocking strains on the pivotal axes of the pools are eliminated.

My invention further contemplates the provision of suitable pivots for the pool and of flexible connections between the counterbalancing supports and the pool, so that the latter will be held against lateral play on its supports and yet permitted to move freely without side bearings as it rises and falls.

My invention further comprises the novel details of construction and arrangements of parts, which, in their preferred embodiments only are illustrated in the accompanying drawings which form a part of this specification, and in which:—

Fig. 1 is a side elevation of a bathing pool constructed in accordance with my present invention and adapted to be counterbalanced by a similar adjacent pool.

Fig. 2 is an end elevation of Fig. 1, showing the two counterbalancing pools and their roller supports, a typical power actuating means being shown only in this view.

Fig. 3 is a corresponding view to Fig. 2 showing a modification of my invention with the counterbalancing supports adapted to rock on fixed fulcrums.

Fig. 4 is still another view showing a further modification of the arrangement of the supports for the larger and heavier types of tanks.

Fig. 5 is a side view, and Fig. 6 a plan view of a tank with counter-balancing weighted rocker arms.

Similar reference numerals refer to similar parts throughout the drawings.

In the embodiment of my invention illustrated in Figs. 1 and 2, I show a fixed beach 5 or approach for bathers which slopes upwardly from the upper or higher end of each of two pools or tanks 6 and 7, which are duplicates in construction so that the description of one will serve for both. Each tank has a sloping bottom 8 leading, from the upper end wall 8^a that runs above the water level, downwardly to and merging into a curved reinforced end wall 9 so designed as to convert the rush of water toward it into a breaking wave-like surf. The side walls 10 of the tank slope downwardly from the top edge of the end wall 9 toward and practically disappear at the shore line or water level at the higher end of the tank. The bottom 8 at its higher end is provided

beneath with hook-like hinge straps 11 which rest upon and overhang a transverse axis or bearing 12, preferably of a very strong rugged design which is suitably mounted on heavy concrete foundations 13 adapted both to support the weight of the tank at its shallow end and to withstand lateral thrust strains from the tank as it moves. There is but slight rocking motion of the hinge straps about the shaft or of the shaft in its bearings and friction at this point can be reduced to any degree desired by the employment of well known mechanical expedients varying in accordance with the expense one desires to incur. The tank bottoms are supported by longitudinal reinforcing I beams 14 which are cross-connected near the lower end of the tank by a transverse I-beam 15 and to the center of this beam is attached a bearing bracket 16 to which a link 17 is pivotally connected, the link at its other end being connected to lugs or ears 18 at one end of a rocker beam 19, which is thus by the links 17 connected at each end to the center of the transverse channels 15 of the two juxtaposed links so that the weight of the tanks counterbalance each other and are borne by this rocker beam which rests upon a suitable support 20, which can have any desired wear resisting and guiding track thereon, such as the metal channel 21.

A fluid pressure motor 22 is shown with its piston plunger 23 pivotally connected to one of the cross channels 15 and fluid pressure is supplied to the motor and exhausted therefrom by a three-way control valve 24 by a pipe 25 leading from any suitable source of fluid pressure supply. This cylinder 22 is designed to supply the necessary power only to unbalance the tanks and cause them to rock with a see-saw motion on their counterbalancing rocker beam. The cylinder has an upper restricted air outlet 26 which will act as a dash-pot on the upstroke of the piston to check the tanks and the valve 24 can be controlled to dash-pot the downstroke for the same purpose or may be set to trap air at any desired point in the piston's down stroke, thereby to bring the tanks to rest. The links 17 permit the tanks to follow a vertical path which is desirable and the counterbalancing rocker beam can be arranged at the end as shown, or at any desired intermediate point in the tank, as may be desired.

In Fig. 3, the manner of constructing and mounting the tanks is the same as described in connection with Fig. 1, except that instead of a single rocker beam I employ two counterbalancing beams 27 and 28 which are mounted to rock on fixed fulcrums 29 on suitable foundations 30, the counterbalancing beam 27 being connected by links 17 with the left hand ends of the cross channels 15 on the two tanks and the counterbalancing beam 28 being connected by links 17 with the right hand ends of the cross channels 15. In this way each rocker beam counterbalances the corresponding sides of the tank and they thus divide the load of the tanks.

In Fig. 4 the construction shown is suitable for very heavy tanks and here a third counterbalancing roller beam 31 is provided in combination with the levers 27 and 28, this lever 31 having its respective fulcrum bearing 29 and the support 30 therefor and being connected by a link 17 with the central portion of the transverse channel 15 of each tank. By this arrangement, the corresponding sides and the center of the tanks have separate counterbalancing beams between which the load is divided.

In operation, the tanks, which may be of a size such as is commonly employed in public amusement bathing pools, will be arranged side by side and pivotally mounted and supported as described. By starting the power mechanism shown, or any equivalent means, the counterbalancing tanks will be unbalanced and given a see-saw motion responsive to which their lower ends will rise and fall causing displacement of the water endwise of the tanks and producing the effect of artificial surf at said low ends of the tanks. The bathers can walk up the gradually rising bottoms of the tank and onto the ground or stationary approach in a manner that will very naturally reproduce sea bathing conditions, which can be heightened by the provision of a sand bed leading from the stationary approach 5 down to the high end of the tank.

In Figs. 5 and 6 I show a modification of my invention wherein a tank constructed and pivotally mounted as described is provided with a cross beam 32 preferably adapted to project at each side beyond the tank and there to be connected by a link 33 to one end of a longitudinally disposed counterbalancing rocker beam 34. Each beam is connected to a suitable counterbalance weight 35 and as tank supporting end rocks down the levers shift their fulcrum points farther and farther from the weights, thereby increasing their leverage effect. The motor 22 acts to unbalance the tank and to control its oscillations and bring it to rest as already described. In this embodiment of my invention the constant weights 35 are made proportionally effective to counterbalance the varying tank load on the rocker beams due to displacement of water as the free tank end rises and falls, by the shifting of the fulcrum point of the rocker levers. This same principle of counterbalance may be used with the cross rocker beams under adjacent tanks or the tanks can be counterbalanced by beams which rock about fixed fulcrums.

The tanks can be built in any shape or size and of any suitable material and can be reinforced and braced as good engineering practice may dictate. Any desired type of motor actuator may be substituted for the formal type of motor shown.

Though I have described with great particularity the details of the embodiment of the invention herein shown, it is not to be construed that I am limited thereto, as changes in arrangement and substitution of equivalents may be made by those skilled in the art without departing from the invention as defined in the appended claims.

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

1. An amusement device comprising a bathing pool pivotally supported near one end and a counterbalance means adapted to support the other end of the pool free to oscillate vertically.

2. An amusement device according to claim 1, in combination power means to control said vertical oscillations.

3. An amusement device according to claim 1, in combination power means to control said vertical oscillations, and comprising a counter-weighted rocker beam.

4. An amusement device according to claim 1, in combination power means to control said vertical oscillations, and comprising a plurality of counter-weighted rocker beams.

5. An amusement device according to claim 1, in combination power means to control said vertical oscillations, and comprising a counter-weighted rocker beam adapted to act with a shifting fulcrum point.

6. An amusement apparatus comprising a pair of pivotally mounted vertically oscillatory bathing pools and common rocker supports on which the pools act to counterbalance each other, and power means to control the oscillatory movements of the pools.

7. An amusement apparaus comprising a bathing pool of increasing depth towards one end, a pivotal support, means for the shallow end of the tank, a counterbalancing support for the free end of the tank, and means to control the vertical oscillations of the pool.

8. An amusement apparatus comprising a bathing pool of increasing depth towards one end, a pivotal support, means for the shallow end of the tank, a curved wall at the deep end of the tank, a counterbalancing support for the free end of the tank, and means to control the vertical oscillation of the pool.

9. An amusement apparatus comprising a bathing pool inclined in the direction of its length, a pivot support for the pool's shallow end, and a counterbalancing rocker support for the pool's deep end.

10. An amusement apparatus comprising a bathing pool inclined in the direction of its length, a pivot support for the pool's shallow end, and a counterbalancing rocker support for the pool's deep end having a shifting fulcrum.

11. An amusement apparatus comprising a bathing pool inclined in the direction of its length, a pivot support for the pool's shallow end, a counterbalancing rocker support for the pool's deep end having a shifting fulcrum, and power means to effect and control the vertical oscillations of the pool.

12. An amusement apparatus comprising a bathing pool inclined in the direction of its length, a pivot support for the pool's shallow end, and a counterbalancing rocker support for the pool's deep end having a pivoted link connection to the pool.

In testimony whereof I affix my signature.

WILLIAM FISCH.