

1,062,838.

J. A. MILLER.
PLEASURE WATERWAY.
APPLICATION FILED SEPT. 26, 1912.

Patented May 27, 1913.

2 SHEETS—SHEET 1.

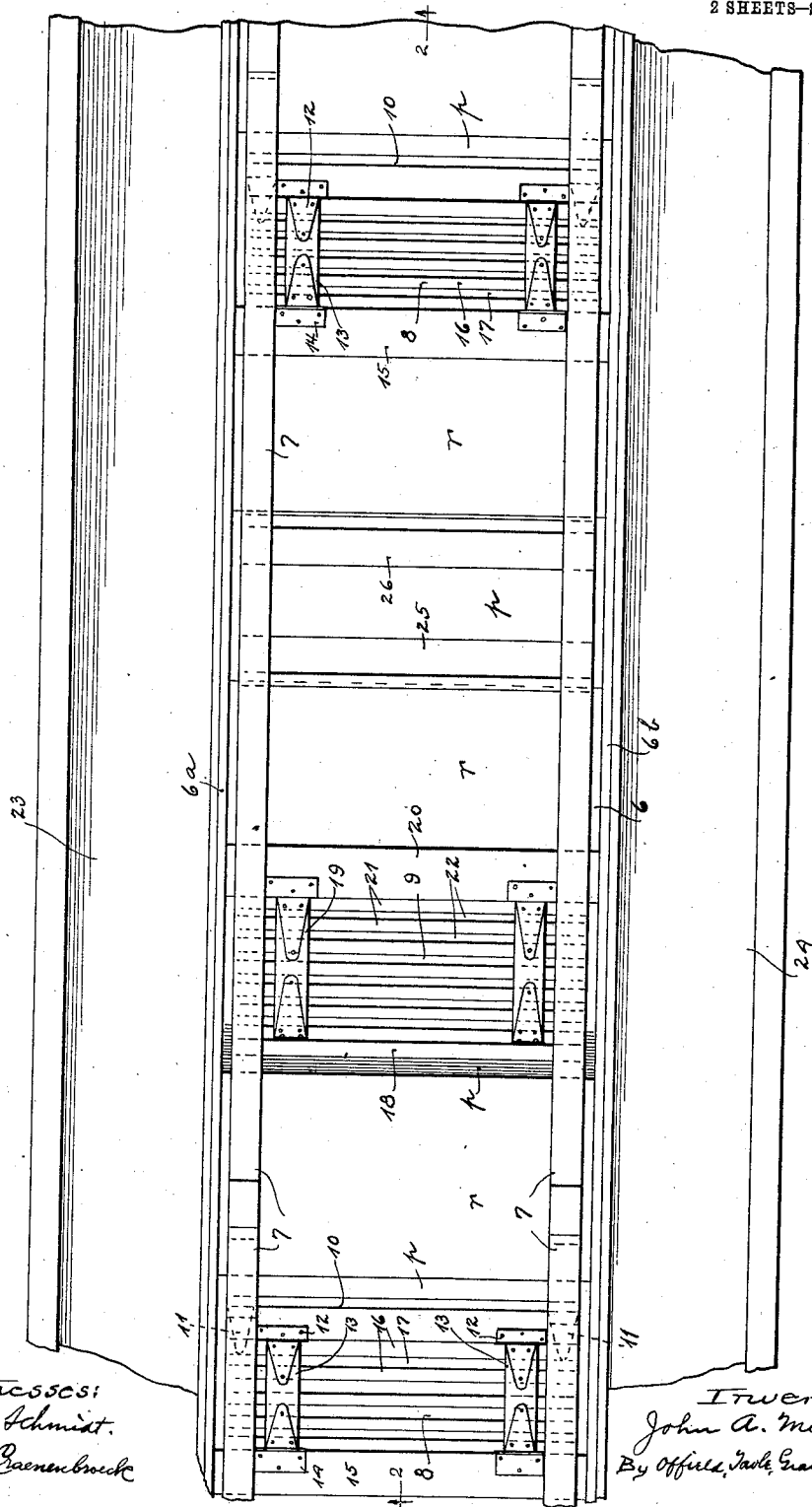


Fig. 1.

Witnesses:
C. J. Schmidt.
A. Van Praenenbroek

Inventor:
John A. Miller
By Offield, Jack, Evans & Offield
Attys.

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2 SHEETS—SHEET 2.

Fig. 3.

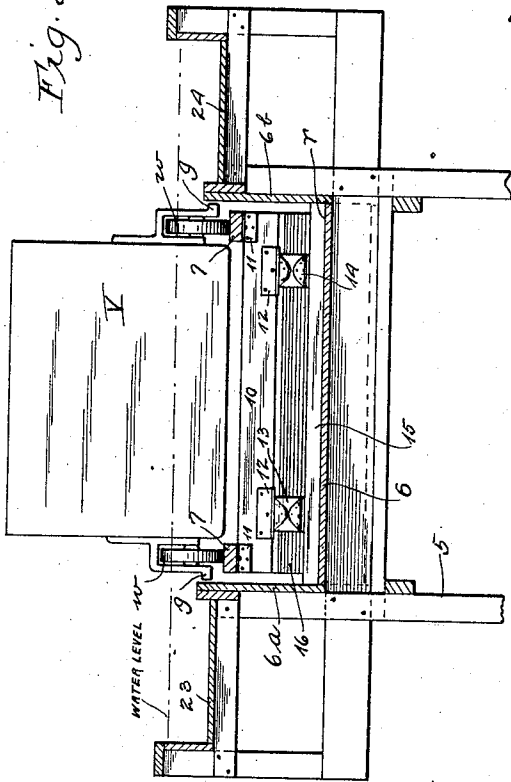
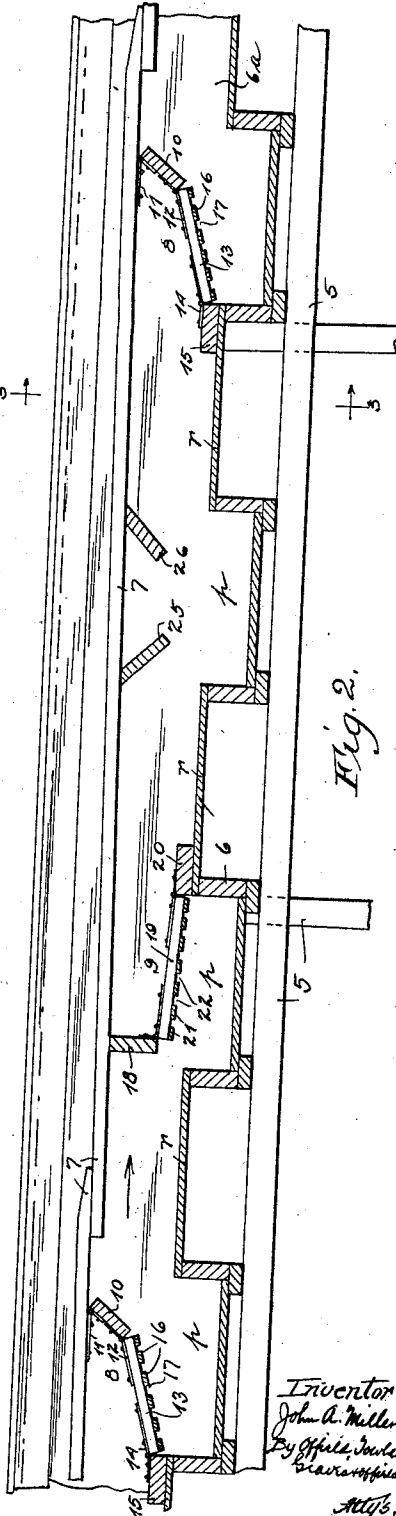


Fig. 2.



Witnesses:
 C. J. Schmidt.
 A. Van Craenbroeck.

Inventor
 John A. Miller
 By Office, Inc.
 New York
 N.Y.

UNITED STATES PATENT OFFICE.

JOHN A. MILLER, OF HOMEWOOD, ILLINOIS.

PLEASURE-WATERWAY.

1,062,838.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed September 26, 1912. Serial No. 722,382.

To all whom it may concern:

Be it known that I, JOHN A. MILLER, residing at Homewood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pleasure-Waterways, of which the following is a specification.

My invention relates to pleasure water ways and contemplates novel features of construction, arrangement and operation.

The general object of the invention is to provide a run-way for water in which baffling and deflecting mechanisms are provided for so directing and agitating the water as to produce great buoyant force and driving pressure with comparatively small volume of water and comparatively low grade. To reduce the resistance to a minimum rails or run-ways are provided for boats or cars traveling through the water, the agitating or buoying mechanism being connected with the rails or run-ways to buoy them upwardly to support the boat or car, the rails or run-ways being vertically more or less flexible so that the car or boat can follow the wave and other motion of the flowing water.

The nature of the invention will be better understood by referring to the accompanying drawing in which—

Figure 1 is a plan view of a section of a water way embodying the features of my invention; Fig. 2 is a sectional view taken from plane 2—2, Fig. 1; and Fig. 3 is a sectional view taken from plane 3—3, Fig. 2.

The water way comprises a main supporting structure 5 on which is supported a trough structure 6 having alternately transverse ridges *r* and transverse pockets *p*. This trough is given a down grade so that water will flow therethrough by the force of gravity, the ridges and pockets serving to baffle and agitate the water. Near the upper edge of the side walls 6^a and 6^b of the trough rails 7 are provided, these rails being preferably of light material such as wood and being wide to prevent lateral bend but being of less vertical thickness so as to be more or less vertically flexible. These rails are anchored to the trough bottom by flexible deflecting, baffling and agitating mechanisms designated as a whole 8 and 9. These mechanisms are connected with the ends of adjacent rails and serve to hold these rails vertically together to allow longitudinal relative movement thereof but to prevent

transverse movement. Adjacent rail ends terminate and overlap over the ridges *r* and the supporting mechanisms 8 and 9 are disposed over the adjacent pockets *p*. Each mechanism 8 comprises a board 10 extending across the trough and hinged along its upper edge to the opposite rails of the overlapping track section by means of hinges 11. The board is hinged at its lower edge by hinges 12 to cleats 13 hinged at their other ends by hinges 14 to the cross board 15 secured at the left edge of the pocket *p* over which the supporting mechanism is situated. The cleats 13 are connected by cross bars 16 separated by spaces 17 so that a grating structure is formed. Each supporting structure 9 comprises a vertical board 18 secured to the underlying ends of the track sections, cleats 19 being hinged to the lower edge of the board 18 and to the cross board 20 secured at the right edge of the associated pocket *p*, the cleats 19 being connected by bars 21 separated by spaces 22.

The vehicle *V* may slide over the rails or may have wheels *w* engaging the rails, ridges or gun-wales *g* being provided along the sides of the vehicle for cooperating with the upper ends of the side walls 6^a and 6^b of the trough to keep the vehicle centered in the trough and in place on the rails. In order to increase the height of the water and yet save in quantity, side troughs 23 and 24 are arranged at the sides of the main trough 6, these side troughs being quite shallow, the water filling the main trough and almost filling the side troughs.

Describing now the operation, the water runs by gravity through the trough and encounters the various pockets, ridges and deflecting structures. When the water reaches one of the structures 8 it flows from the preceding ridge onto the structure and then through the grating passageway 17 into the pocket below, this flow of the water tending to draw down the structure 8 to carry the overlapping track ends downwardly. A considerable amount of water is also deflected upwardly over the board 10 to agitate the surface of the water and to strike against the vehicle. The water coming out of the pocket *p* encounters the next ridge *r* and some of it is immediately deflected upwardly against the underlying rail ends, the water then flowing into the next pocket *p* where it more or less chokes up and attempts to escape through the passageway 22

of the structure 9, this flow of water tending to force the structure 9 upwardly so that the underlying rail ends are forced upwardly against the over-lying rail ends and the rails are thus held vertically together at their ends to form a continuous run-way for the vehicle. At the same time the rails or run-ways are free for relative longitudinal movement and for vertical flexure so that the vehicle may follow to a great extent the wave and other motions of the water. Above the pockets intermediate the rail ends slanting baffling boards 25 and 26 may be provided and are preferably secured to the rails and in such direction and position that the water flowing over the ridges and pockets of the trough will exert buoyant force on the intermediate portions of the rails.

The various frames 8 and 9 and the baffle members 25 and 26 act more or less like pistons in connection with the pockets, the weight of the traveling vehicle on the rails causing the water to be more or less compressed and forced into the pockets to be violently thrown out of the pockets through the grating passageways and over the ridges and against the rails and the vehicle, the surface of the water being then very much agitated and turbulent and the rapid upward and forward ejections of water causing the vehicle to be forced rapidly onward with irregular and more or less jerky motion thus causing considerable excitement and pleasure. The rails greatly reduce the resistance and enable the car to travel very rapidly yet the rails are sufficiently flexible and will allow the car to follow the various movements of the water.

I do not of course desire to be limited to the precise construction and arrangement shown and described as modifications are possible which would still come within the scope of the invention, and I claim the following:

1. In a pleasure water way, the combination of a trough disposed on a grade, rails disposed in said trough, and means controlled by the flow of water through said trough for holding said rails up to receive a vehicle.

2. In a pleasure water way, the combination of a trough disposed on a grade and having water flowing therethrough, alternate ridges and pockets at the trough bottom, supporting frames hinged to the edges of said pockets, and rails secured to the upper ends of said supporting frames, said frames being controlled by water flow to hold said rails in position to receive a vehicle.

3. In a pleasure water way, the combina-

tion of a trough disposed on a grade and having water flowing therethrough, rails adjacent the upper edges of said trough and having overlapping ends, and supporting frames secured to the trough walls and to the ends of the overlapping rails and controlled by water flow through said trough to hold the overlapping ends of said rails securely together.

4. In a pleasure water way, the combination of a trough disposed on a grade and having water flowing therethrough, the bottom of said trough being provided alternately with transverse ridges and pockets, rails adjacent the upper edges of said trough, the lower end of each rail overlapping the end of the next rail, frames secured to the overlapping end of each rail and to the entrance edge of a pocket whereby water flow over said frame and into said pocket will tend to force said frame and connected rail downwardly, a second frame secured to the under-lying end of each rail and to the outlet edge of a pocket, water flowing out of said pocket tending to raise the said frame whereby the rail ends are held vertically together.

5. In a pleasure water way, the combination of a trough for running water, rails within said trough, mechanical means controlled by water flow through said trough for holding said rails close to the surface of the water and in engagement with a vehicle traveling with the water.

6. In a pleasure water way, the combination of a trough having water flowing therethrough, rails in said trough for receiving vehicles, a grating frame hinged to the trough bottom and to said rails and controlled by the water flow through said trough to keep the rails together and in alinement.

7. In a pleasure water way, the combination of a trough having water flowing therethrough, the bottom of said trough having a plurality of transverse pockets, rails submerged in said water for guiding a vehicle through said trough, and movable frames disposed over said pockets and connected with said rails to be depressed toward said pockets upon movement of a vehicle over said rails whereby the water is forcibly ejected from said pockets against said rails and vehicle.

In witness whereof, I hereunto subscribe my name this 20th day of September, A. D. 1912.

JOHN A. MILLER.

Witnesses:

CHARLES J. SCHMIDT,
JOYCE M. LUTZ.