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ARTIFICIAL WHIRLPOOL.

APPLICATION FILED MAY 27, 1908.

904,848. Patented Nov. 24, 1908.

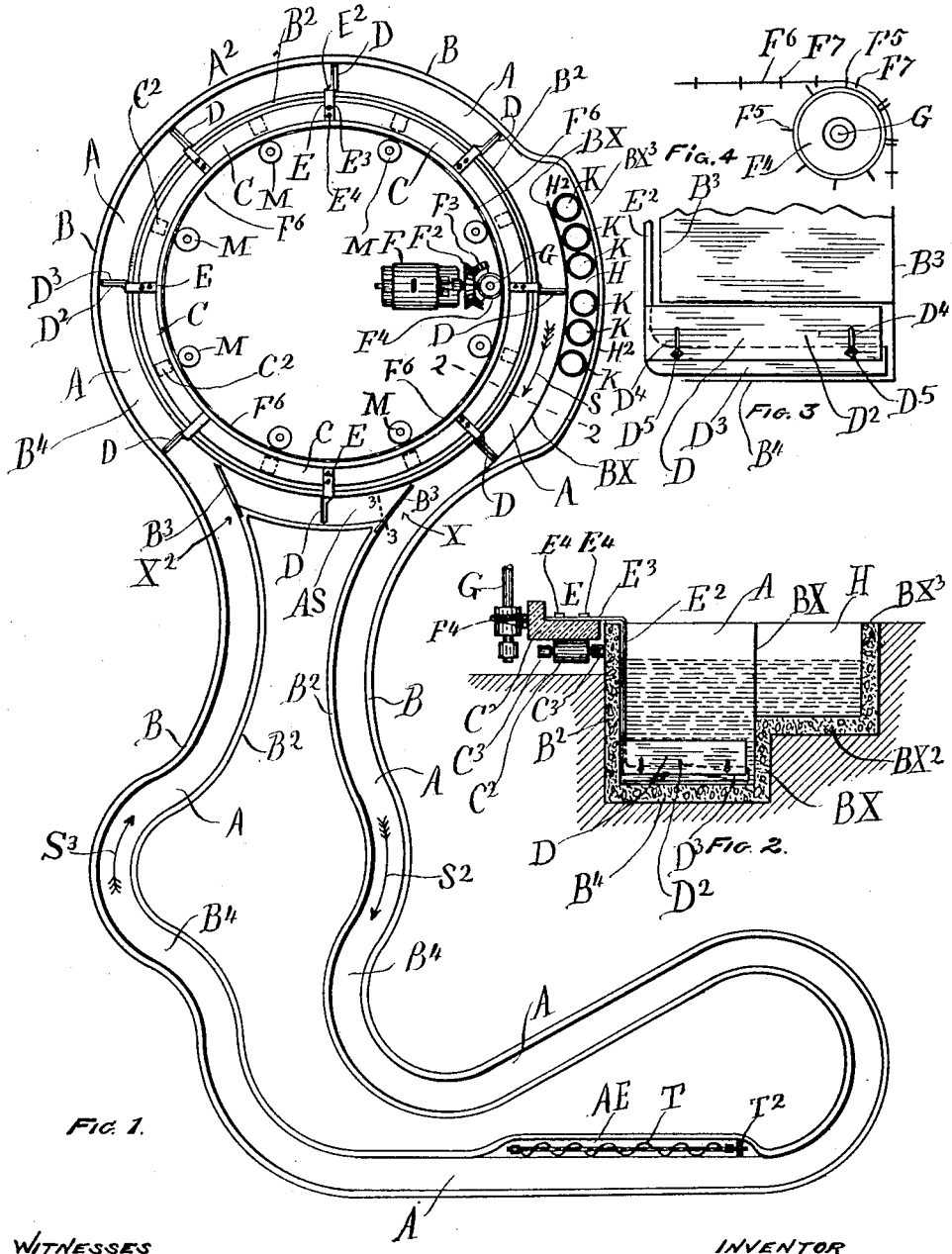

FIG. 1.

FIG. 4

FIG. 3

FIG. 2.

WITNESSES

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ARTIFICIAL WHIRLPOOL.

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To all whom it may concern:

Be it known that I, WILLIAM W. DEVORE, a citizen of the United States, and a resident of the town of California, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Artificial Whirlpools, of which the following is a specification.

The invention is primarily intended for public amusement.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings making a part of this specification and in which similar characters of reference indicate corresponding parts,—Figure 1 is a plan view of the apparatus embodying my invention. Fig. 2 is a vertical transverse section of the device shown in Fig. 1, taken in the plane of the dotted line 2, 2, of said Fig. 1. Fig. 3 is a detail taken in the plane of the dotted line 3, 3, of Fig. 1, the spectator looking toward that face of the same which faces toward the left in Fig. 1, the said view, however, being confined to the canal in which the paddles operate. Fig. 4 is a plan view of the sprocket wheel and a portion of the sprocket chain whereby rotatable motion may be communicated to the rotatable circular platform carrying the paddles.

I will now describe my invention in detail. A indicates the canal to contain water. This canal is wide enough and deep enough to properly contain pleasure boats which are to be floated upon the water therein. The canal is intended to be an endless one, so that the water in one part shall, by means of a suitable current established therein, move around through the canal and return to the place whence it first started. The canal may be of any desired length, such length being limited by the strength of the current and the best fulfillment of the purpose for which it is designed. In the illustrative drawing, I have shown this canal extending in a series of curves, which latter serve to afford variety of direction and movement to the occupant of the boat floating on the moving water of said canal.

The bottom B^4 and the walls B, B^2 of this canal A may be made of any suitable material, but are preferably constructed of sheet steel, bent or united in a proper manner. Means for creating a current of water through this canal are substantially as follows: I provide a frame or platform C which is rotatable. These rotatable means may be of any desired construction; one form might consist of the track upon which the flanged wheels duly connected to this rotatable frame or platform C run. The construction illustrated in the drawings consists of the rollers C^2 journaled in stationary bearings C^3, the latter duly connected to the stationary portion of the frame. On these rollers moves the rotatable platform C.

The power for rotating the platform C may be of any desired kind. One description of the same is shown and consists of an electric motor F constructed to rotate a beveled gear F^2, which latter meshes with the horizontally disposed bevel gear F^3 fixed on the shaft G. This shaft G carries a sprocket wheel F^4 whose pins or cogs F^5 successively engage with the links or projections F^7 of the sprocket chain F^6. This sprocket chain F^6 is held in position close to the revolving platform by means of the rollers M, M, disposed in a circle within the space inclosed by the circular platform C.

The operation of the motor F rotates the gear wheels F^2, F^3 and the sprocket wheel F^4, thereby setting in motion the chain F^6 connected to the circular platform C. In this way, this circular platform C is rotated.

It is to be understood that instead of the sprocket wheel F^4 and the sprocket chain F^6, other suitable means of rotating the circular platform may be employed, as for instance, a friction wheel arranged to move the circular platform by frictional contact between this wheel and the side of the said platform.

This circular platform carries a set of paddles. These paddles are located in a circular canal which is a part of the canal already mentioned. The paddles D may be in one piece, but I prefer to construct them in two parts, namely: a main portion D^2 and a supplemental portion D^3, the part D^3 being connected to the main portion D^2 by means of slots and bolts, the slots located in one of the parts and the bolts connected to the other part. Thus in the specific illustration (see Fig. 3), there are in the main part D^2 of the paddle, slots D^4, D^4, and bolts and nuts D^5, D^5, connected to the supplemental paddle D^3, said bolts being respec-

tively located in the slots D^4, holding the said supplemental part D^3 to the main portion D^2, and at the same time permitting the supplemental paddle to be raised or lowered so as to approach nearer to or away from the bottom B^4 of the canal. In this way, the full power of the paddle can be, when desired, utilized and at the same time may be prevented from scraping the bottom of the canal. These paddles are respectively connected to the platform C by means of arms E, whose vertical portions are indicated by the character E^2 and whose upper horizontal portion is indicated by the character E^3. This horizontal portion is duly secured to the platform C preferably by bolts E^4. As the platform C rotates, the paddles D move around in the circular portion of the canal A, substantially as shown and move the water forward in said canal in the direction of the arrow S. When this water reaches the point X, it moves on down in the canal A in the direction of the arrow S^2 and continues on through the more or less serpentine portion of the canal, and returns as indicated by the arrow S^3, and ultimately reaches the point X^2 of the canal A. Here it enters again the circular portion of this canal A, and moving around in said canal again reaches the point where the arrow S is seen. So long as the circular platform and its paddles are in motion, the current of water will continue to move in the direction and to the extent heretofore described.

In order to accommodate the paddles D and at the same time preserve so far as possible the integrity and oneness of the canal A at the point X where the paddles move away from the main line of the canal A, and at the point X^2 where the paddles again enter the circular portion of the main line of the canal A, I provide at each of these points of junction a wall B^3. This wall extends down into the canal but short of interfering with the space in which the paddles move. Thus in Fig. 3, there is seen one of these partitions B^3 and below it the paddle D composed, as it preferably is, of the parts D^2, D^3,—this paddle is there seen located above the bottom B^4 of the canal A. In this canal I locate boats K, preferably in plan view circular,—each preferably having a bottom flat or substantially flat. These boats K are adapted to float on the waters of the canal A and when these waters of the canal are in motion the boats pass along the canal and return as do the waters of the canal. Paddles are preferably located near the bottom of the canal and operate in the water below where the bottom of the boat comes, so that the paddles cannot interfere with the boat while passing through the circular portion of the canal A wherein the paddles revolve. The paddles in their movement pass around through this circular canal A under the partition B^3 aforementioned at X, and moving onward in a circular section AS of the canal A soon pass under the partition B^3 at X^2 and are in the circular portion of the canal A, and each boat K moves around in the canal A. When it reaches the partition B^3, the latter prevents it entering the circular extension AS of the canal A and it passes on in the regular canal A toward the arrow S^2 and follows the windings of the said canal A around to the arrow S^3 and thence to the point X^2 of the canal. Here it cannot by any chance enter the section AS of the canal A because the partition B^3 at that point prevents it so doing, and it passes on in a circular portion of the canal around to that portion of the canal shown on the right hand side of Fig. 1 of the drawing.

In order to have a number of boats to supply the demand of those who desire to take passage therein, I provide a boat harbor H, which is preferably arranged as follows: BX is an extension partition between the canal A and the boat harbor. BX^2 is a horizontal extension which forms the bottom of the boat harbor. BX^3 is a vertical extension which forms the outer wall of the boat harbor. This boat harbor opens at H^2 into the canal A. When any person desires to take passage in the boat, he occupies said boat, and the latter is then moved out of the boat harbor into the main canal A, whereupon the current in the canal carries the boat around through the canal as heretofore described. In this way a pleasant diversion is afforded.

In the canal A, near the bottom of Fig. 1, is seen a conveyer or worm T. This conveyer is operated at one end at T^2 by suitable power and connections. It is located in a side enlargement AE of the canal A, so as to be out of the way of the boats K as they pass along the canal at this point. The function of this conveyer is to agitate the water of the canal at this point and cause waves to appear at a point in the canal where the water will be likely to be calm and uninteresting. The waves of the canal at this point will add to the diversion of the trip.

The circular frame and the sides of the canal are preferably made of sheet steel.

What I claim as new and of my invention and desire to secure by Letters Patent, is:—

1. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame, and paddles in the canal, the paddles secured to this circular frame, substantially as and for the purposes specified.

2. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame and paddles in the canal, the paddles secured to the circular frame, the canal extended in a course beyond the circular part

of it and then returned thereto, and guard partitions at the places where the extensions of the canal join the circular portion, substantially as and for the purposes specified.

3. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame, paddles located in the canal and secured to this circular frame, and a boat harbor consisting of an adjunct canal whose mouth opens into the main canal, substantially as and for the purposes specified.

4. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame and paddles in the canal, the paddles secured to the circular frame, the canal extended in an elongated course beyond the circular portion of it, and provided in this extension with a device for agitating the water of the canal, substantially as and for the purposes specified.

5. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame and paddles in the canal, and moved by the said frame, and an elongation of the canal beyond the circular portion, and a rotatable conveyer device in the extension of the canal for agitating the water therein, substantially as and for the purposes specified.

6. In an apparatus for making whirlpools, a circular canal, the circular rotatable frame, the paddles in the canal and connected to the rotatable frame, a boat harbor adjunct to the canal and opening therein, an extension of the canal, and a device therein for agitating the water thereof, substantially as and for the purposes specified.

7. In an apparatus for making whirlpools, a circular canal, a circular rotatable frame, rollers for supporting this frame and enabling it to rotate with diminished friction, paddles in the canal whose upper edge is below the level of the draft of the boats designed to travel therein, arms from the paddles to the rotatable frame, substantially as and for the purposes specified.

8. In an apparatus for making whirlpools, a circular canal, and a rotatable circular frame and paddles in the canal, and moved by the said frame and an elongation of the canal beyond the circular portion, and in the said extension of the canal an enlargement at one side thereof, and a conveyer for making waves on the water, substantially as and for the purposes specified.

9. In an apparatus for making whirlpools, a circular canal, a circular rotatable frame located within the circle of the circular canal, and paddles within the canal and arms from the paddles extending up along the inner wall of the canal, and over this wall and onto the said rotatable frame and fixed thereto, substantially as and for the purposes specified.

10. In an apparatus for making whirlpools, a circular canal, a rotatable circular frame, paddles in the canal and connected to the frame, the paddles located in the lower portion of the canal, the paddles being respectively made in sections, the sections adjustable relatively to each other, substantially as and for the purposes specified.

11. In an apparatus for making whirlpools, a circular canal, a rotatable circular frame, paddles located in the canal and connected to this frame, each paddle having a main float or part and a supplemental float joined by bolt and slot connection, the main part having the slots, and the supplemental part having the bolts, substantially as and for the purposes specified.

12. In an apparatus for making whirlpools, a circular canal, a rotatable circular frame, paddles located in the canal, arms located next to the inner wall of this canal, and connecting the inner end of the paddle to the rotatable frame, substantially as and for the purposes specified.

13. In an apparatus for making whirlpools, a circular canal, a circular rotatable frame, paddles in the canal rigidly connected by arms to the circular frame, a motor located within the circular space embraced by the canal and the frame, and means intermediate between the circular frame and the motor for enabling the latter to rotate this circular frame, substantially as and for the purposes specified.

14. In an apparatus for making whirlpools, a circular canal, and a circular rotatable frame, located within the space embraced by the circular canal, and a motor located within the space embraced by the circular frame, a sprocket chain located around the inner wall of the circular frame, rollers M to keep the chain in place, a sprocket wheel engaging said chains, and means between this wheel and the motor for enabling the latter to rotate this wheel, substantially as and for the purposes specified.

15. In an apparatus for making whirlpools, a circular canal, and a circular rotatable frame, located within the space embraced by the circular canal, a motor located within the space embraced by this circular frame, a sprocket chain located around the inner wall of the circular frame, rollers M to keep the chain in place, a sprocket wheel engaging said chain, and the beveled gear F^2 on the motor shaft and beveled gear F^3 engaging the beveled gear F^2, both said gears fixed on shaft G, the sprocket wheel also concentrically fixed on this shaft G, substantially as and for the purposes specified.

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Attest:
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