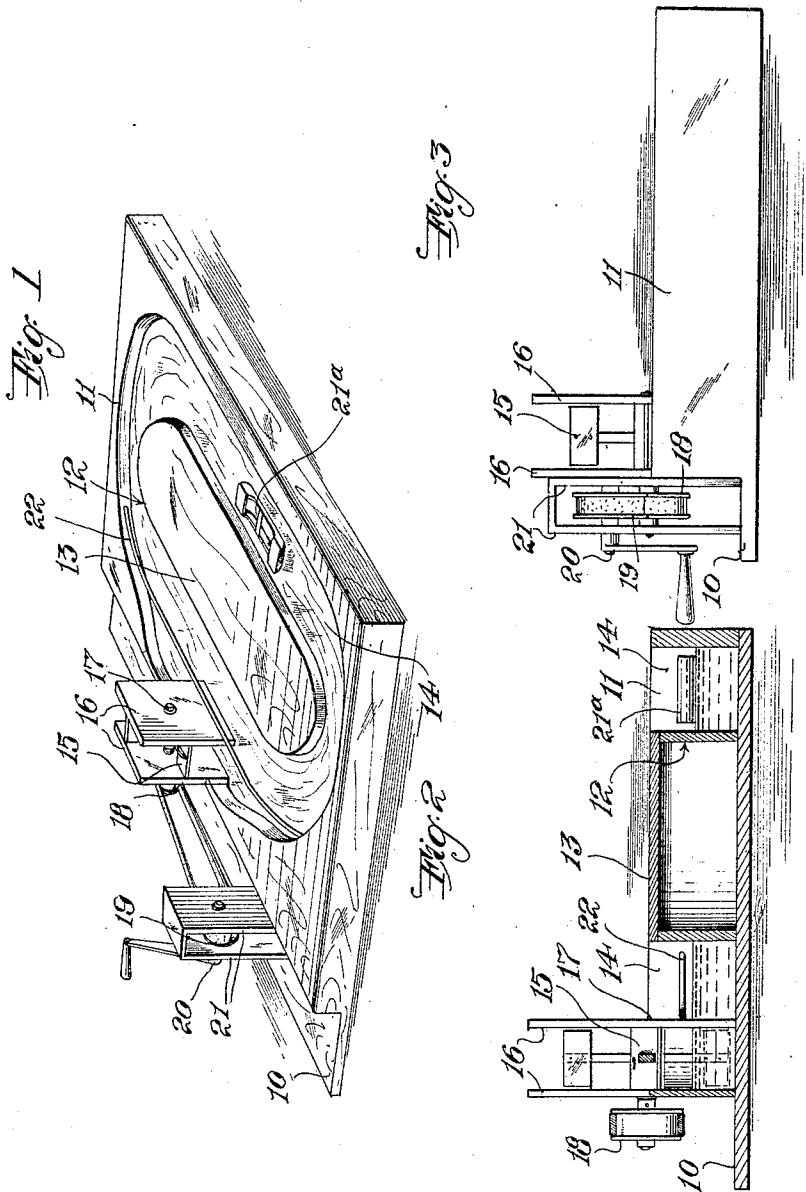


E. R. WATSON.
 MINIATURE MILL RACE TOY.
 APPLICATION FILED AUG. 17, 1920.

1,368,671.

Patented Feb. 15, 1921.

2 SHEETS—SHEET 1.



Inventor
 E. R. Watson

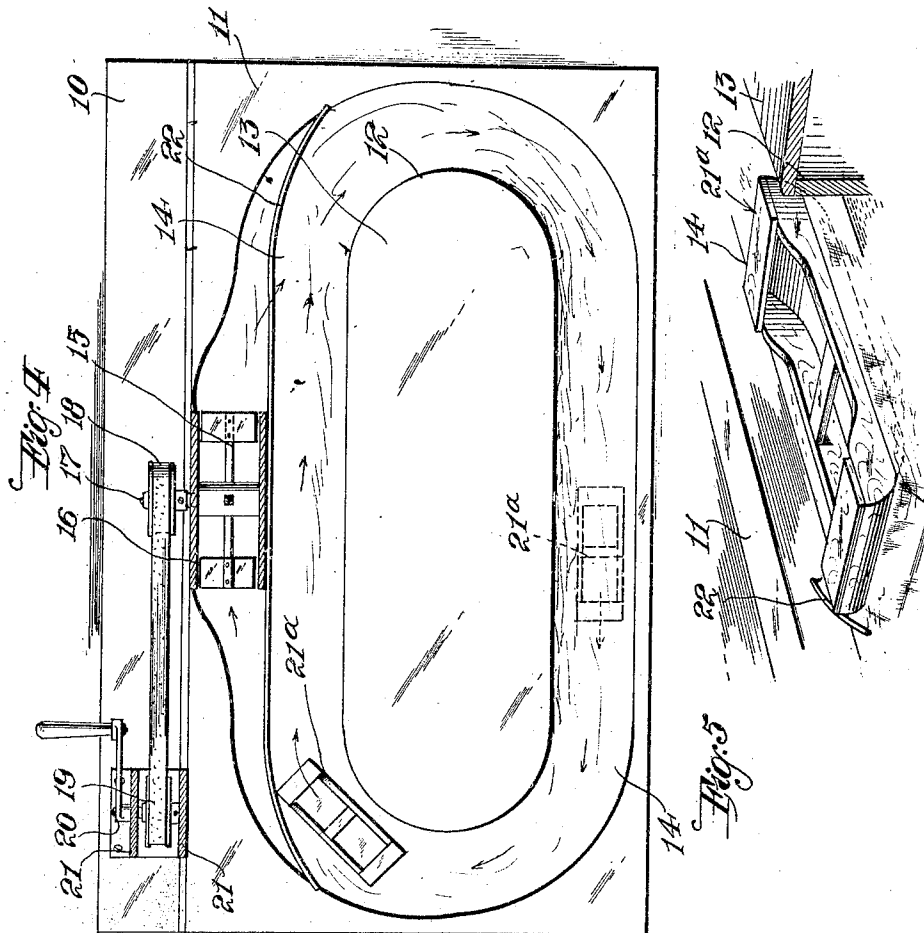
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UNITED STATES PATENT OFFICE.

EDGAR R. WATSON, OF JERSEY CITY, NEW JERSEY.

MINIATURE-MILL-RACE TOY.

1,368,671.

Specification of Letters Patent. Patented Feb. 15, 1921.

Application filed August 17, 1920. Serial No. 404,083.

To all whom it may concern:

Be it known that I, EDGAR R. WATSON, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Miniature-Mill-Race Toys, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to toys, and particularly to a toy designed to simulate a mill race.

The general object of my invention is to provide a toy of the character described having therein an endless channel, which is preferably approximately circular, the water in which channel is caused to circulate by means of a manually operable water wheel, there being boats designed to float in said channel and move around across the channel by the current of the channel caused by the water wheel or paddle wheel.

A further object is to provide means permitting the boats to pass the paddle wheel but preventing the boats from passing beneath the blades of the paddle wheel.

A further object is to provide an attractive toy of simple character, which may be cheaply made and which will be amusing. Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of my device;

Fig. 2 is a cross sectional view;

Fig. 3 is an end elevation;

Fig. 4 is a top plan view;

Fig. 5 is a fragmentary detail perspective view partly in section of the boat and part of the canal or channel in which it moves.

Referring to these drawings, 10 designates a base of any suitable character having the outer, upwardly extending wall 11 and the inner, upwardly extending wall 12, the space surrounded by the wall 12 being preferably covered over by a cover 13. I do not wish to be limited, however, to simply covering this space over.

The channel 14 defined by the walls 11 and 12 is designed to contain water, and this water is caused to flow in either direction around the channel by means of a paddle

wheel 15 whose axle is mounted in the upwardly projecting side boards 16. The paddle wheel is mounted on the shaft 17 which extends out beyond one of the side boards and is provided with a pulley 18 by which it may be driven. Preferably this is done by means of a band wheel 19 mounted upon a crank shaft 20 mounted in supports 21 extending upward from the base, this band wheel being connected to the band wheel 18 by means of a belt, sprocket chain, or other suitable connection. Obviously, I do not wish to be limited to this means of transmitting power to the paddle wheel.

Boats 21^a are designed to be disposed in the water channel 14 and travel around with the current of water therein, and in order to prevent the boat from passing beneath the paddle wheel I provide a guard rail 22 which is preferably of relatively heavy metal wire attached at separated points to the outside wall of the channel and attached at its middle to the inner supporting member 16. This guard rail is disposed just sufficiently high above the top of the channel that boats will engage therewith and be prevented from being carried by the current beneath the water wheel. The paddle wheel will be preferably entirely inclosed. The boat will have a width not greater than the distance between the inner wall 12 and that portion of the guard rail 22 nearest to the inner wall so that boats may pass between this inner wall 12 and the guard rail. In actual use, the water in the channel will have a depth of approximately 3" and the boats will, of course, have a proper draft for this depth of water and a length such that they may turn the curves in the channel.

In the operation of this device, when the paddle wheel is running swiftly it will cause a current in the water in the channel in one direction and the boats will be caused to move around the mill race or channel with the current. Obviously, the faster the paddle wheel runs, the more rapidly the boats will move. It is obvious also that other floating toys than boats might be used in connection with this mill race, such as floating ducks, fish, and the like. I do not wish to be limited to the particular construction of the paddle wheel, nor to the particular

means whereby it is driven. The housing over the paddle wheel prevents the paddle wheel from splashing water.

I claim:—

- 5 1. A toy of the character described comprising a body formed to provide an endless water channel having oppositely disposed parallel portions connected by curved portions at their ends, one of the straight portions of the channel being laterally widened, 10 a paddle wheel disposed in the laterally widened portion of the channel and having means whereby it may be driven, and a guard rail attached to the body extending 15 longitudinally along that part of the channel which is widened, the ends of the guard rail being curved and intersecting the outer wall defining the curved portions of the channel, said guard rail being adapted to 20 prevent floating objects from passing into the laterally enlarged portion of the channel beneath the paddle wheel but permitting the passage of water through the paddle wheel.
- 25 2. A toy of the character described comprising a body formed to provide an endless channel, a paddle wheel disposed at one point in the channel, the channel at this point being wider than the paddle wheel, 30 and a guard rail attached to the body and extending along the channel adjacent the paddle wheel and preventing floating objects from passing beneath the paddle wheel but permitting the water to pass thereunder.
- 35 3. A toy of the character described comprising a base having inner and outer up-standing walls defining a water channel between them, upwardly extending housing members disposed at one point in said chan- 40 nel and extending into the channel a portion of the width thereof, a manually actuatable

paddle wheel disposed between these housing members and beneath which the water in the channel passes, and means for driving said paddle wheel.

- 45 4. A toy of the character described comprising a base having inner and outer up-standing walls defining a water channel between them, upwardly extending housing members disposed at one point in said chan- 50 nel and extending into the channel a portion of the width thereof, a manually actuatable paddle wheel disposed between these housing members and beneath which the water in the channel passes, means for driv- 55 ing said paddle wheel, and a guard rail attached to said outside wall at spaced points, the inner end of said housing members disposed to prevent passage of floating objects beneath the paddle wheel but permit the 60 passage of floating objects through the space between the paddle wheel housing and the inner wall.

- 65 5. A toy of the character described comprising a base having inner and outer up-standing walls defining a water channel between them, upwardly extending housing members disposed at one point in said chan- 70 nel and extending into the channel a portion of the width thereof, a manually actuatable paddle wheel disposed between these housing members and beneath which the water in the channel passes, means for driv- 75 ing the paddle wheel comprising a band wheel on the paddle wheel shaft, a second band wheel having a crank shaft, a support for the second band wheel, and a band engaging said band wheels.

In testimony whereof I hereunto affix my signature.

EDGAR R. WATSON.