No. 760,503. PATENTED MAY 24, 1904.

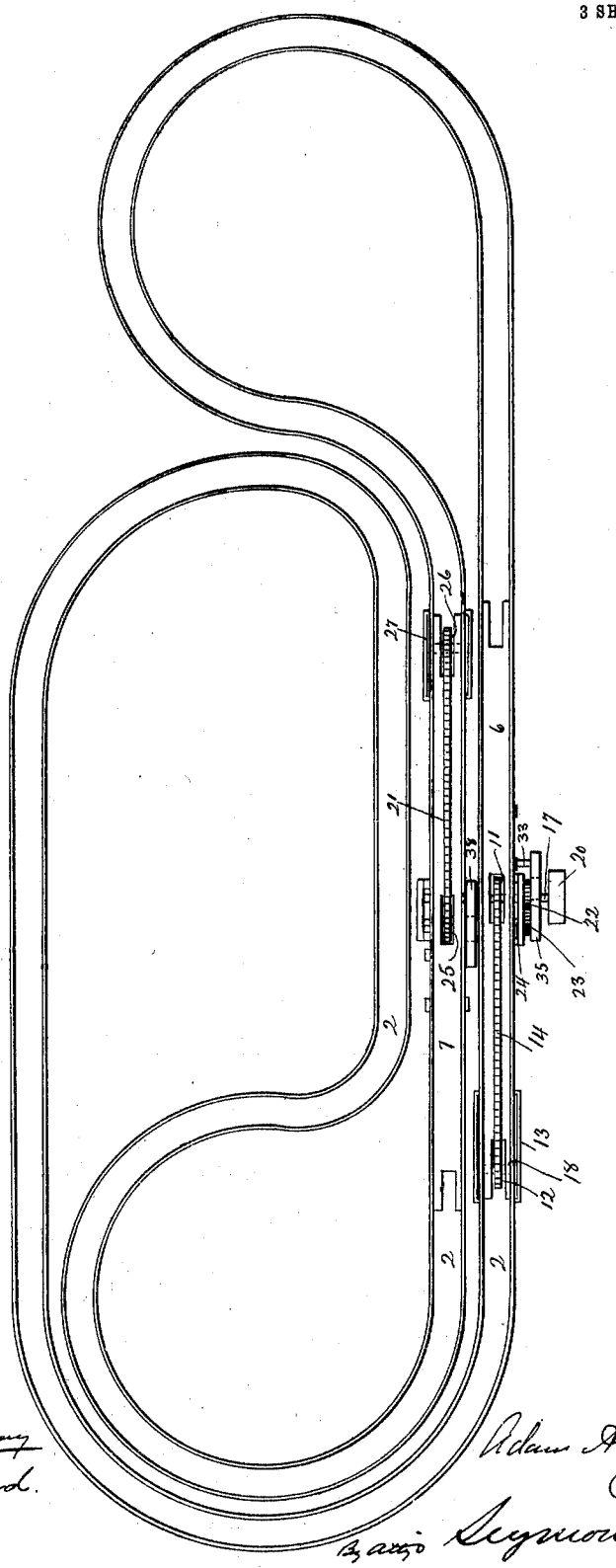
A. A. WELSH.

WONDERLAND SCENIC WATERWAY.

APPLICATION FILED SEPT. 2, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



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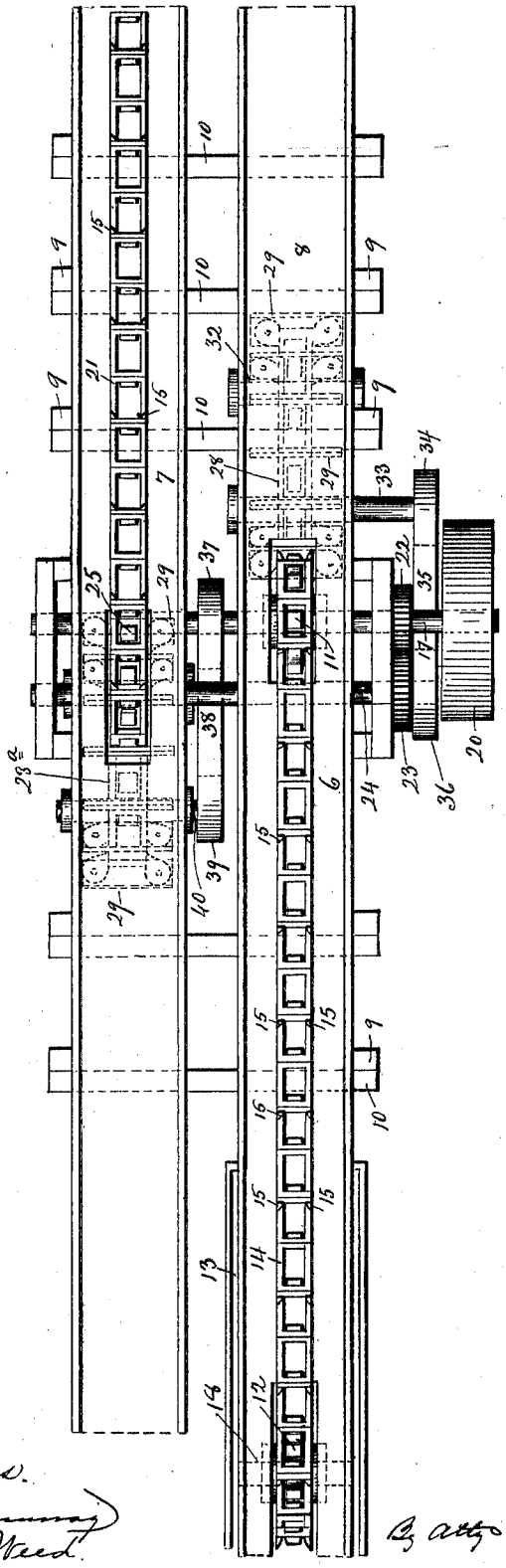
NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 3

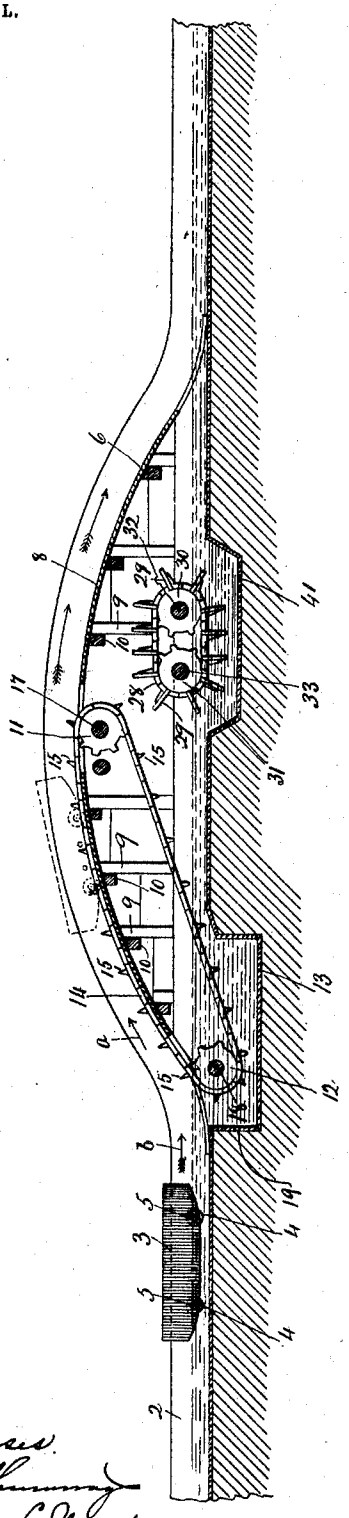


Fig. 4

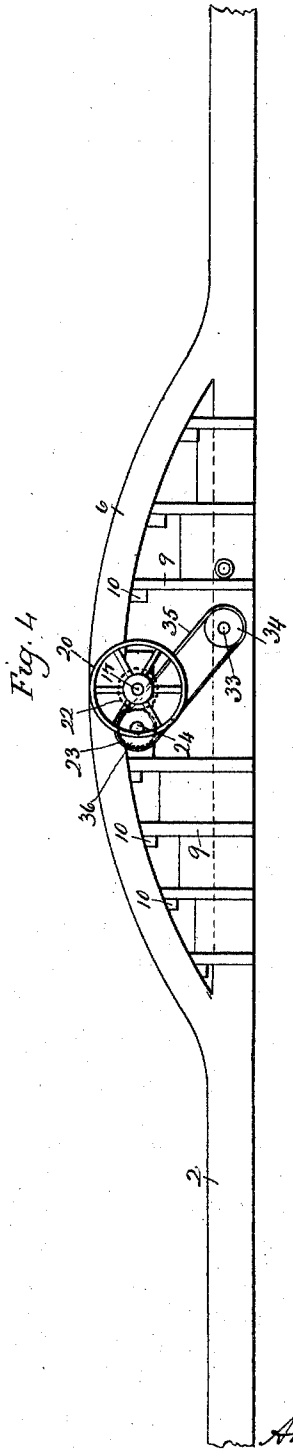


Fig. 6

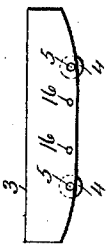
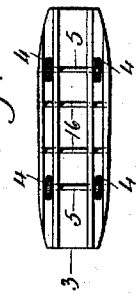


Fig. 5



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UNITED STATES PATENT OFFICE.

ADAM A. WELSH, OF WEST HAVEN, CONNECTICUT.

WONDERLAND SCENIC WATERWAY.

SPECIFICATION forming part of Letters Patent No. 760,503, dated May 24, 1904.

Application filed September 2, 1903. Serial No. 171,615. (No model.)

To all whom it may concern:

Be it known that I, ADAM A. WELSH, of West Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Wonderland Scenic Waterways; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view in the nature of a diagram of one form which my improved scenic waterway may assume; Fig. 2, an enlarged plan view of that portion of the waterway which comprises the "shoot the chute" features thereof; Fig. 3, a broken view in vertical longitudinal section of the outer chute; Fig. 4, a broken view, in outside elevation, of the outer chute; Fig. 5, a detached reverse plan view of the boat; Fig. 6, a view thereof in side elevation.

My invention relates to an improvement in wonderland devices, and more particularly to that class of those devices known as "scenic" waterways, the object of my present invention being to provide means for heightening the interest and excitement of scenic waterways.

With these ends in view my invention consists in the combination, with a trough, of a chute, a boat, and means for taking the boat from the waterway and carrying it to the top of the chute and releasing it for descent into another portion of the waterway.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention as herein shown I employ a scenic waterway in the form of a shallow trough 2, having straight reaches and curves, which will be varied in form and extent according to the nature and scope of each installation. By preference this waterway will be inclosed and may be combined with panoramic and illusory features familiar in this art, and therefore not necessary to be detailed here. In the trough I locate a boat 3, provided fore and aft with small wheels 4, mounted on axles 5; but these wheels do not travel upon the bottom of the waterway and are brought into requisition only in connection with the two chutes 6 and 7, which extend parallel with and bridge portions of the waterway which is continuous under them. As these chutes correspond to each other, a description of one will suffice for both. Thus the chute 6 is composed of a curved platform 8, supported upon a framework of vertical trusses 9 and horizontal trusses 10; but the particular construction of the platform and its supporting-framework may of course be varied as found expedient. The number of chutes may be varied, according to the character of the installation. In some instances only one chute will be employed, or more than two might be employed, all according to circumstances.

Each chute is provided with an upper sprocket-wheel 11, which is located just below the highest point of the platform 8 of the chute, and with a lower sprocket-wheel 12, which is submerged in the water of a well 13 interposed in the waterway or trough 2 and extending below the level of the bottom thereof, so that the water in which the sprocket-wheel 12 runs is considerably deeper than the normal level of the water in the trough. A sprocket-chain 14 runs over the wheels 11 and 12 and is formed with forwardly-inclined boat-lifting teeth 15, constructed and adapted to engage with the axles 5 of the wheels 4 of the boat or with coupling-shafts 16, transversely arranged in the bottom of the boat, as shown in Fig. 5. The boat is floated by the current in the trough up to the sprocket-chain, the teeth of which engage with one of the axles 5 of one of the shafts 16, whereby the boat is lifted by the chain out of the trough and carried up on one side of the chute to the top and beyond the center thereof, when it disengages itself and rides down over the other side of the chute into the trough, through which it is propelled by the current to the next chute, where it is again lifted and let go, and so on, whereby the excitement of shooting the chutes is added to the attractions of a scenic waterway. It will be understood that as soon as

the boat is lifted out of the water its rolls come into play. They ride up the platform when the boat is being dragged up by the chain and down the platform when the boat is descending into the water. As herein shown, the wheel 11 is mounted upon the main driving-shaft 17 of the device, while the wheel 12 is mounted upon a short driven shaft 18. For the elevation of the boat the sprocket-chain 14 must be driven in the direction of the arrow *a*, and therefore in the opposite direction from the direction in which the water in the trough is circulating, as shown by the arrow *b*, Fig. 3. The tendency of the sprocket-chain would therefore be to establish a back current in the opposite direction from the direction of the main current of water in the trough; but this back current is overcome and nullified by the location of the sprocket-wheel 12 in the pit or well 13, whereby the back current is avoided, the currents developed by the chain 14 and wheel 12 being nullified by the wall 19 of the well 13. The driving-shaft 17 is provided with a pulley 20, to which a driven belt is led from any convenient source of power.

In the installation herein shown the boat must shoot the chute 7 in the opposite direction from its passage over the chute 6. For this reason the sprocket-chain 21 of the inner chute 7 must be moved in the opposite direction from the chain 14. I therefore mount upon the driving-shaft 17 a spur-gear 22, meshing into a corresponding spur-gear 23, mounted upon a driven shaft 24, carrying a sprocket-wheel 25, corresponding to the sprocket-wheel 11, but rotating in the opposite direction. The lower sprocket-wheel 26 of the inner chute is located in a well 27, corresponding to the well 13, already described. As has been explained, the two chutes correspond to each other; but the sprocket-chains are driven in opposite directions.

As herein shown, the circulation of the water in the trough is provided for by two chains 28 and 28ª, carrying wing-like paddles 29, which just clear the side walls of the trough, so that in their action they push the water ahead of them and create virtually a suction of water behind them, whereby they are rendered very effective in circulating the water for the propulsion of the boat. As shown in Fig. 3, the chain 28 is mounted upon two sprocket-wheels 30 and 31, the former being mounted upon a short shaft 32 and the latter being mounted upon a driving-shaft 33, carrying a pulley 34, over which runs a belt 35, also passing over a pulley 36 on the shaft 24, before mentioned, whereby the chain 28 is driven in the same direction as the chain 14. The corresponding chain 28ª is driven in the opposite direction by means of a pulley 37, mounted upon the main shaft 17 and driving a belt 38, running over a pulley 39, mounted on a shaft 40, which drives the sprocket-wheels 31 and 32 of the chain 28ª of the inner chute. It will be seen by reference to Fig. 3 that the trough 2 is formed with another well or "pit" 41 to give the depth of water required for the operation of the paddle-chains. The inner chute is provided with a corresponding well or pit, which is not shown. In each case the paddle-chains are located beneath the chute, where they are out of the way. Of course the means for circulating the water in the trough may be varied without changing the chutes or the means employed for lifting the boats out of the water and raising them into position for their descent by gravity into the water again.

In view of the modifications suggested and of others that may obviously be made I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such departures therefrom as fairly fall within the spirit and scope of my invention.

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

1. In a scenic waterway, the combination with a trough, of a chute extending parallel with and bridging the trough which is continuous under the chute, a boat, means located beneath the chute for lifting the boat up one side of the chute and releasing it to permit it to ride down the other side thereof, and means also located beneath the chute for circulating water in the trough.

2. In a scenic waterway, the combination with a trough, of a boat, a chute bridging the trough which is continuous under it, means for lifting the boat out of the water to the top of the chute down the opposite side of which it then rides, and means located under the chute for circulating the water in the trough.

3. In a scenic waterway, the combination with a trough, of a chute extending parallel with and bridging the trough which is continuous under the chute, a boat, a sprocket-chain located under the chute in position to engage with the boat and lift the same from the water to the top of the chute and release it for its descent into the water again, and means also located beneath the chute for circulating the water in the trough.

4. In a scenic waterway, the combination with a trough, of a chute extending parallel with and bridging the trough which is continuous under the chute, a boat, means located beneath the chute for lifting the boat up on one side of the chute and releasing it to permit it to ride down the other side thereof, a paddle-chain located below the chute and provided with paddles extending to the side walls of the trough for effecting the circulation of the water therein, and sprocket-wheels for the said paddle-chain.

5. In a scenic waterway, the combination with a trough, of a chute extending parallel with and bridging the trough which is con-

tinuous under the chute and provided under the chute with two pits or wells, a boat, a sprocket-chain located under the chute, running at its lower end in one of the said pits and adapted to engage with the boat and lift it up on one side of the chute and release it to permit it to ride down the other side thereof, sprocket-wheels for the said sprocket-chain, a paddle-chain located in the other pit or well under the chute, and sprocket-wheels for the said paddle-chain.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ADAM A. WELSH.

Witnesses:

GEORGE D. SEYMOUR,

FREDERIC C. EARLE.