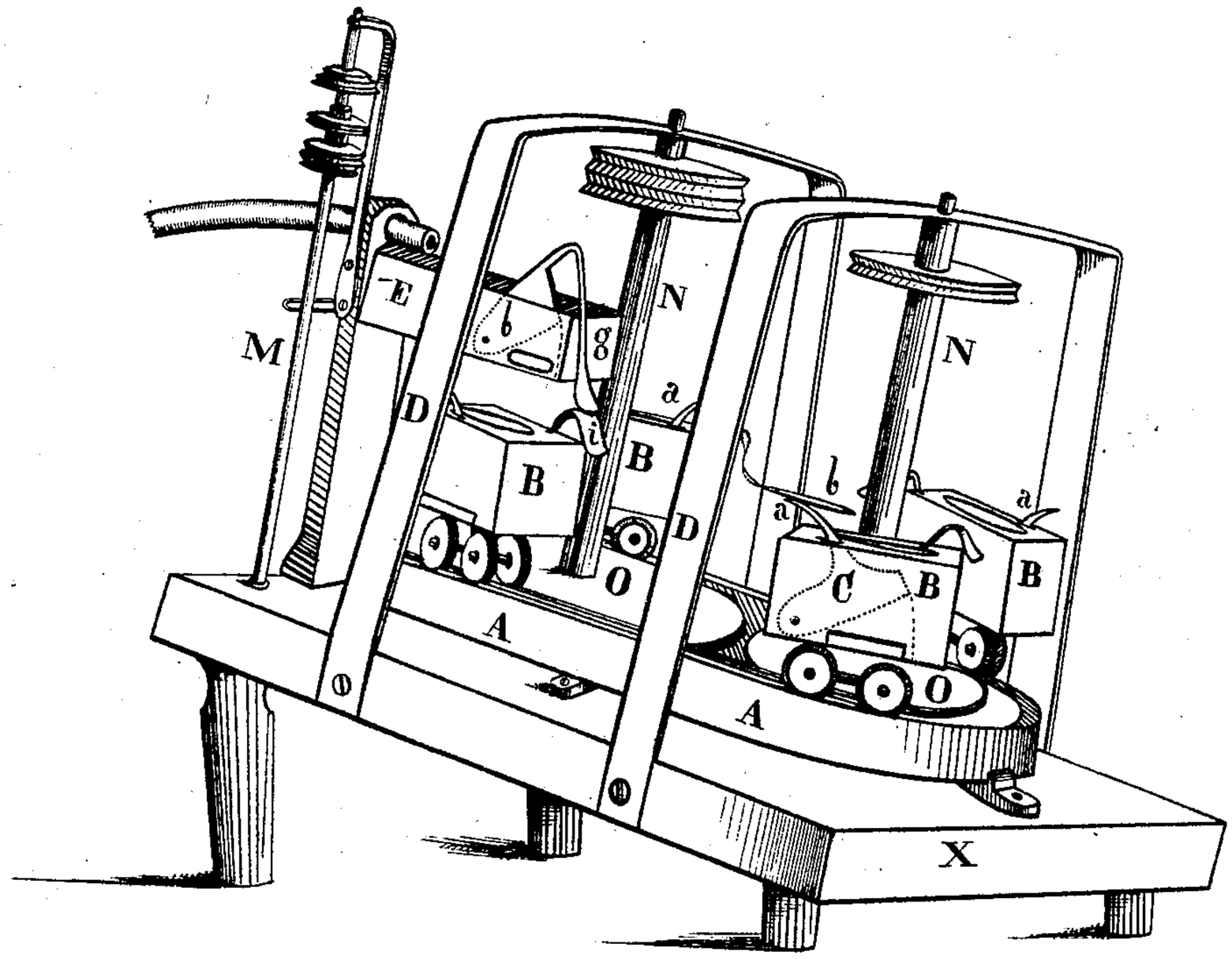
C. MONSON.

Hydraulic Motors.

No. 149,412. Patented April 7, 1874.



Witnesses

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CHARLES MONSON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN HYDRAULIC MOTORS.

Specification forming part of Letters Patent No. **149,412**, dated April 7, 1874; application filed March 20, 1874.

To all whom it may concern:

Be it known that I, CHARLES MONSON, of New Haven, in the county of New Haven, State of Connecticut, have invented a new and useful Hydraulic Motor; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

The object of my invention is to utilize streams of water, also the water from lakes or other sources, which are at or near the summit of hill and mountain slopes, and make the same available as a motive power to an extent which is not attainable by any of the known forms of water-wheels used as hydraulic motors.

In the drawing, letters of the same name and kind indicate like parts.

To instruct others to make and use my motor, I will describe my invention and the mode of its operation.

In the drawing, the base-board X, having legs of unequal length, is intended to represent a graded hill-side or mountain slope. On such inclines I construct railway-tracks, which may be parallel tracks of equal length, or they may be parallel and endless tracks A A, as shown in the drawing. To run on these tracks, I construct cars the bodies of which are water-tanks, B B B B, and are provided with automatic valves, one of which is indicated by the letter C, for the discharge of water at or near the bottom of the incline. These valves are pivoted or hinged to the inside of the water-tank, and are provided with arms *a a a a*, which pass under the projecting piece *b*, attached to the frame D, and are thus opened and kept open long enough to discharge the water. They close by their own weight when the arms *a a a a* have passed beyond the projecting piece *b*. In case of parallel tracks of equal length I employ two cars only, and connect the same with a rope passing over a pulley at the upper ends of the tracks, constructed in a plane parallel with the tracks, the diameter of which equals the distance from the center of one track to the center of the other track; or, in its stead, two smaller pulleys may be used, the parts of the circumferences of which most remote from each other being in line with the center of the tracks, the rope being of such length that when one car is at the bottom of the incline the other shall be at the top. The motion of the cars thus arranged is alternate, and a shaft, M, with clutches and pulleys, is shown, by which motion in one direction is secured.

The contrivance for filling the cars with water and for discharging the same is substantially the same as that shown with the endless track.

In case of parallel and endless tracks A A, any required number of cars are employed, each end of which is connected with the endless rope running over the two pulleys O O, arranged in the same plane or in a parallel plane with the track. The best arrangement of these pulleys is under the track, and, if necessary, the track can be supported from above. These pulleys are attached to the shafts N N, on which are other pulleys for communicating motion. They turn in the frame D and in the base-board X. The cars are open on the top, and may be divided into water-tight compartments, each compartment being provided with a valve made as above described. The tracks may be constructed like ordinary railway-tracks for the transportation of passengers and freight, or they may be narrower, and such as economy and experience dictate.

At or near the upper ends of these railway-tracks, which are located as near as possible to the water-supply, I construct an aqueduct or reservoir, of any of the well-known forms, and to bring water to a water-wheel in such a manner that water from the same may reach the water-tanks through valves constructed within the aqueduct. The part E, with the pipe leading to it, shows the aqueduct as well, perhaps, as it can be illustrated in a drawing. The valve *b*, attached to the inside of the aqueduct, is provided with an arm, *g*, which comes over the top of the same, and down so as to be operated by the piece *i*, attached to the tank. I do not confine myself to any particular form or number of valves, either in the tanks or aqueduct, but employ the form and number best adapted to the purpose.

The length of these inclined tracks is lim

ited only by the strength of the rope to which the cars are attached.

The operation of this invention is obvious enough. When the descending cars are loaded with water sufficient to overcome the friction of the train, the train will move, and continue its motion until the water is shut off. The best results are obtained when the velocity of the train is about four feet per second.

The combination I make, I believe, is novel, and produces a new result. The elements of the combination, except the water-tank cars, which I believe to be new, are old.

I claim as my invention—

An inclined railway-track, in combination with cars the bodies of which are water-tanks, provided with automatic valves for the discharge of water at or near the bottom of the incline, and with an aqueduct at the top of the incline, provided with automatic valves for supplying water to the tanks, substantially as shown and described.

CHARLES MONSON.

Witnesses:

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