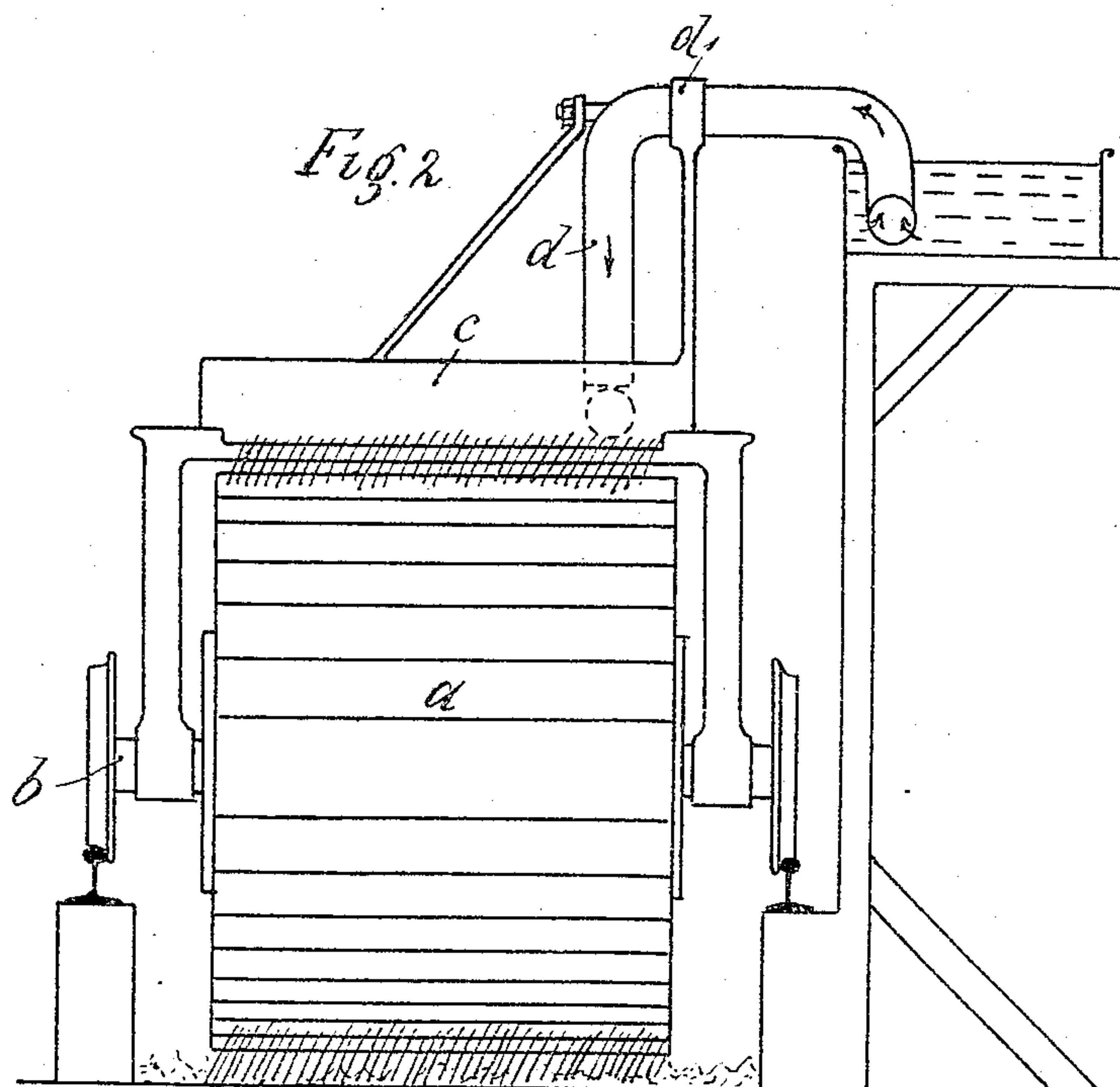
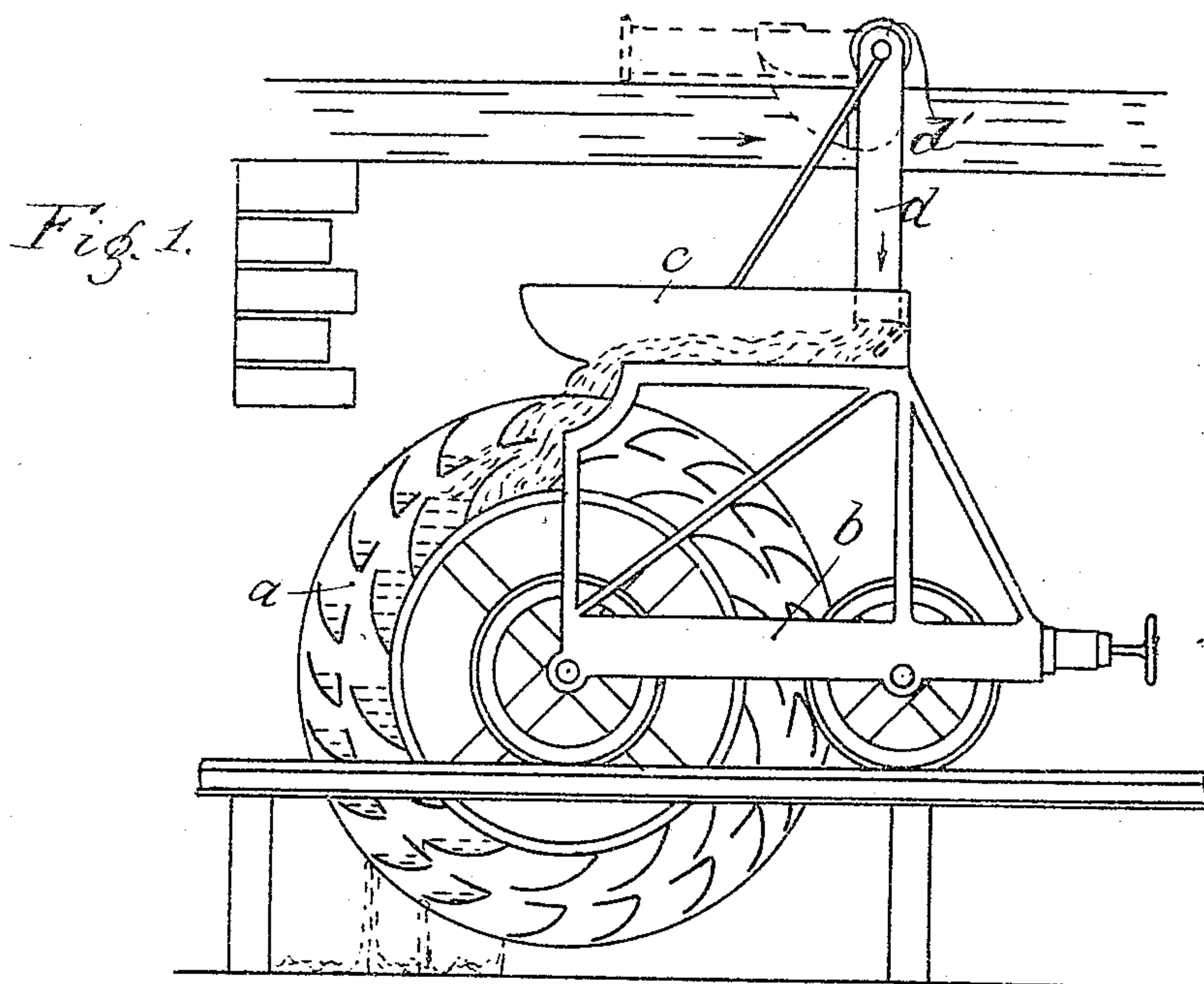


No. 765,896.

PATENTED JULY 26, 1904.

F. KIRCHBACH.
WATER LOCOMOTIVE.
APPLICATION FILED APR. 20, 1904.

NO MODEL.



Witnesses:

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FRANK KIRCHBACH, OF MUNICH, GERMANY.

WATER-LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 765,896, dated July 26, 1904.

Application filed April 20, 1904. Serial No. 204,021. (No model.)

To all whom it may concern:

Be it known that I, FRANK KIRCHBACH, a citizen of Germany, residing at Munich, Bavaria, Germany, have invented certain new and useful Improvements in Water-Locomotives; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to water-locomotives or vehicles driven by water-power, and has for its purpose the provision of means whereby streams which are too small or too rapid for navigation may be utilized to furnish water-power for commerce either up or down stream. I attain this object by arranging a suitable track preferably below the level of the waterway and providing vehicles carrying water-wheels so arranged as to be fed from the waterway.

In practice from the highest available point of the stream the water is led into a substantially horizontal or slightly-inclined canal located the necessary distance above the level of the rails upon which the locomotive is designed to travel, while below the level of the rails is arranged a discharge canal or drain to carry off the waste water. An elevation of from three to four meters is usually found to be sufficient for the canal, while a cross-section of one square meter is also found to be practicable for the purpose.

In order that my invention may be more readily understood, I have illustrated a preferred embodiment of the same in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved water-locomotive; and Fig. 2 is an end view of the same, partly in section.

The water-locomotive itself is composed of four principal parts, as follows: The water-wheel *a*, as shown, is of a particular type, upon which I have applied for a patent in a copending application. It will be understood, however, that other styles of water-wheels or turbines may be employed more or less advantageously. The vehicle *b* is shown as a four-wheeled truck, upon the front axle of which is fixed the water-wheel *a*, which man-

ner of mounting is found best adapted to secure the highest degree of power with a minimum of friction. If it is desired to attain greater speed the water-wheel may be loosely mounted and geared to the rear axle by means of chain-gearing or otherwise. The water-reservoir *c* is arranged in a suitable manner upon the truck and above the water-wheel and is adapted to discharge the water in the most advantageous manner upon the blades or buckets of the wheel *a*, its supply of water being constantly renewed. The siphon *d*, which is preferably of circular cross-section, is pivotally mounted above the reservoir *c* upon the standard *d'* and held in position by suitable braces. The siphon has two portions or legs of different lengths, the shorter arranged to dip below the surface of the water of the canal, while the longer leg discharges into the water-reservoir *c*.

In order that the siphon *d* may be filled and set in operation, it is pivotally mounted, as stated, at *d'*, so that it may be turned into a horizontal position. The discharge end is then closed by a water-tight cap or cover. An air-vent provided at the upper end of the cover permits the last trace of air to escape therefrom as the water is poured into the siphon. When filled, the siphon is returned to its vertical position and the cap removed, when a constant stream of water will flow from the canal through the siphon into the reservoir, from which it will be discharged onto the water-wheel, and thus serve to effect the propulsion of the locomotive and the drawing of such vehicles as may be attached thereto.

An essential advantage of my invention is the economy of operation due to the fact that coal and other fuels are dispensed with, while practically no attention is required, owing to the simplicity of construction and manner of operation.

Having thus fully described my invention and the manner of its operation, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a canal or waterway, of a vehicle, a water-wheel mounted

