

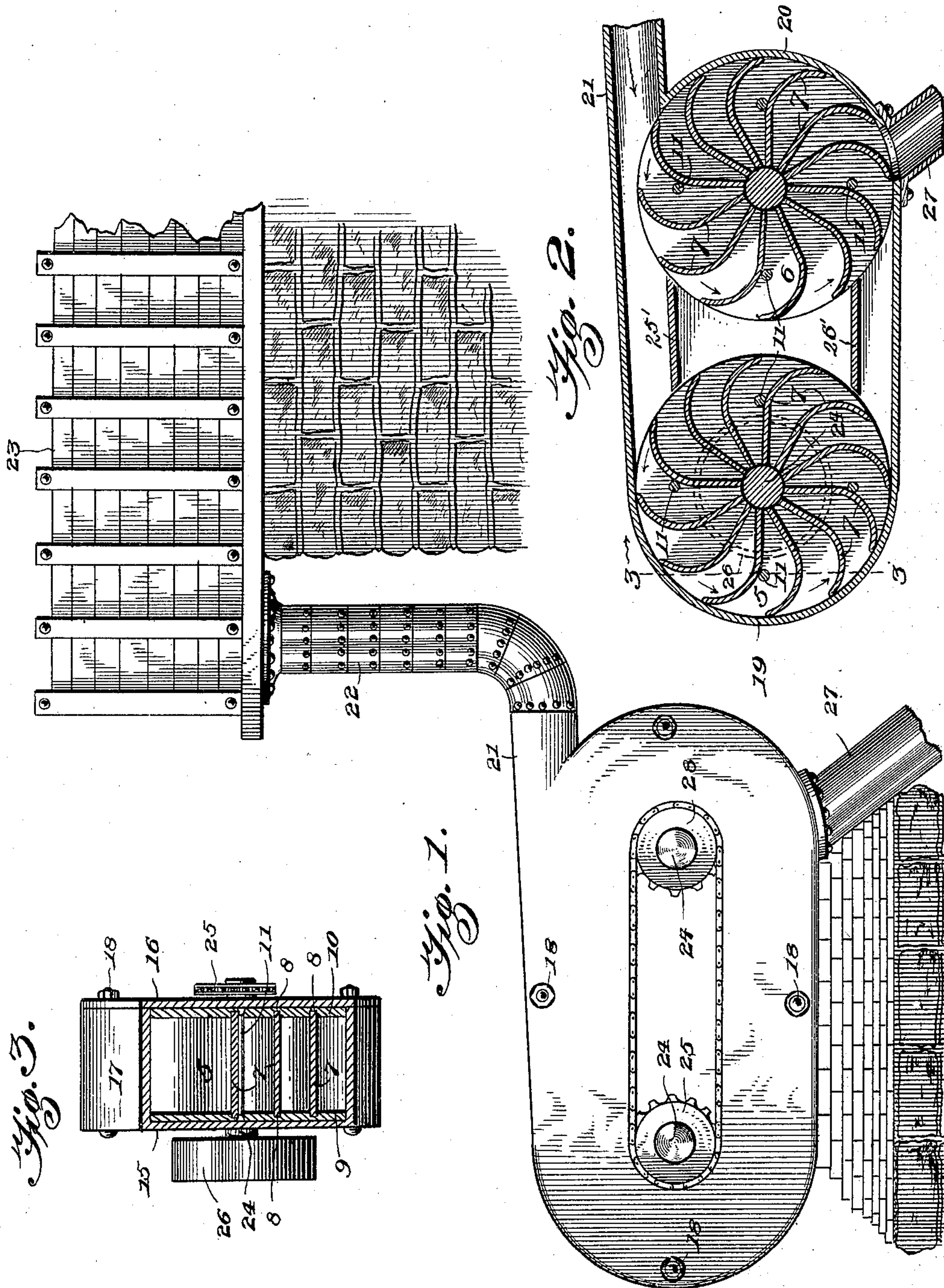
No. 687,074.

Patented Nov. 19, 1901.

B. E. SHEPLER.
WATER MOTOR.

(Application filed Feb. 21, 1901.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

BENJAMIN EDWIN SHEPLER, OF CLARKSBURG, WEST VIRGINIA.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 687,074, dated November 19, 1901.

Application filed February 21, 1901. Serial No. 48,363. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN EDWIN SHEPLER, a citizen of the United States, residing at Clarksburg, in the county of Harrison and State of West Virginia, have invented a new and useful Water-Motor, of which the following is a specification.

This invention relates to water-motors; and it has for its object to provide a construction wherein a maximum bucket-surface will be exposed to the action of the water and wherein the full force of the water will be utilized.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation showing the casing in which the two wheels are contained and illustrating the forebay and its connection with the casing through the penstock. Fig. 2 is a vertical longitudinal section through the casing and the wheels. Fig. 3 is a section on line 3 3 of Fig. 2.

Referring now to the drawings, in the present invention there are employed two wheels 5 and 6, each of which comprises a shaft from which radiate blades 7, which are curved for their outer ends to project in a direction opposite to that of rotation of the wheel, and the side edges of these several blades are disposed in similarly-curved grooves 8, which are formed in the inner faces of the disks 9 and 10, forming the sides of the wheel. Bolts 11 are passed longitudinally through the wheel and are engaged with the end disks to hold them securely against outward displacement. The two wheels 5 and 6 are of equal diameters and are disposed at the ends of an inclosing casing. This casing comprises two spaced plates 15 and 16, disposed parallel and connected at their edges by a frame 17, said frame and plates being held together by bolts 18. The casing, as shown, has semicircular ends 19 and 20, of which the end 19 is somewhat wider than the end 20, the upper and lower sides of the frame being disposed convertingly, and connected with the major end of the casing, at the upper side thereof, is an inlet-pipe 21, connected with the penstock 22, leading from the forebay 23.

The wheel 5 has its shaft 24 journaled in the side plates of the casing concentric with the curvature of the end 19, and one protrud-

ing end of this shaft is provided with a sprocket-wheel 25, while the opposite protruding end has a pulley 26 fixed thereon. The wheel 5 fits snugly to the adjacent curved end of the casing, but with sufficient spacing to permit of easy rotation thereof.

The wheel 6 is of the same diameter as the wheel 5 and is disposed at the broadened end of the wheel-casing, the upper portion of the curvature of this broadened end being on a greater radius than the lower portion, as shown, so that the wheel 6 fits snugly to the adjacent end of the casing, excepting at its upper portion, the upper side of the casing being spaced upwardly therefrom. Disposed with its axis tangent to the uppermost portion of the wheel 6 is the inlet-pipe 21, which directs the water from the penstock partly against and partly over the blades of the wheel 6.

Between the upper and lower portions, respectively, of the wheels 5 and 6 are disposed diaphragms 25' and 26', the upper diaphragm preventing the water that passes over wheel 6 from dropping between the wheels and directing it against the blades of the wheel 5.

The water that passes around with the wheel 6 is discharged through the tail-race 27, and the water that passes around with the wheel 5 flows between the diaphragm 26' and the bottom of the casing and after coming in contact with the lower portions of the blades of the wheel 6 passes out through the tail-race.

The shaft of the wheel 6, which protrudes at one end from the casing, is provided with a sprocket 28, with which is engaged a chain engaging also the sprocket of the wheel 5, so that the power of both wheels is delivered to the driving-pulley.

It will of course be understood that, if preferred, the wheels 5 and 6 may be disposed with their axes vertical instead of horizontal, and other modifications may be made without departing from the spirit of the invention.

What is claimed is—

1. A device of the class described comprising a casing having a major end and a minor end, a wheel rotatably disposed in each end of the casing, the wheel in the minor end being fitted close to the casing and the wheel at the major end of the casing being spaced

- downwardly from the upper side thereof and close to the end thereof, transverse diaphragms in the casing disposed above and below the plane of the axes of the wheels, an inlet-opening through the major end of the casing and extending above and below the uppermost portion of the adjacent wheel, and an outlet below said wheel in the major end of the casing.
2. A device of the class described comprising a casing having major and minor arcuate end portions, a wheel disposed within each end portion and with its periphery to move in close proximity to the end of the casing, the wheel in the major end of the casing being spaced downwardly from the upper side of the casing to permit of water passing thereover, an inlet disposed to direct water against and over the wheel in the major portion of the casing against the wheel in the minor portion, and an outlet for the casing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN EDWIN SHEPLER.

Witnesses:

P. M. LONG,

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