No. 657,528. Patented Sept. 11, 1900.

E. EVERSON.

WATER MOTOR.

(Application filed Mar. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

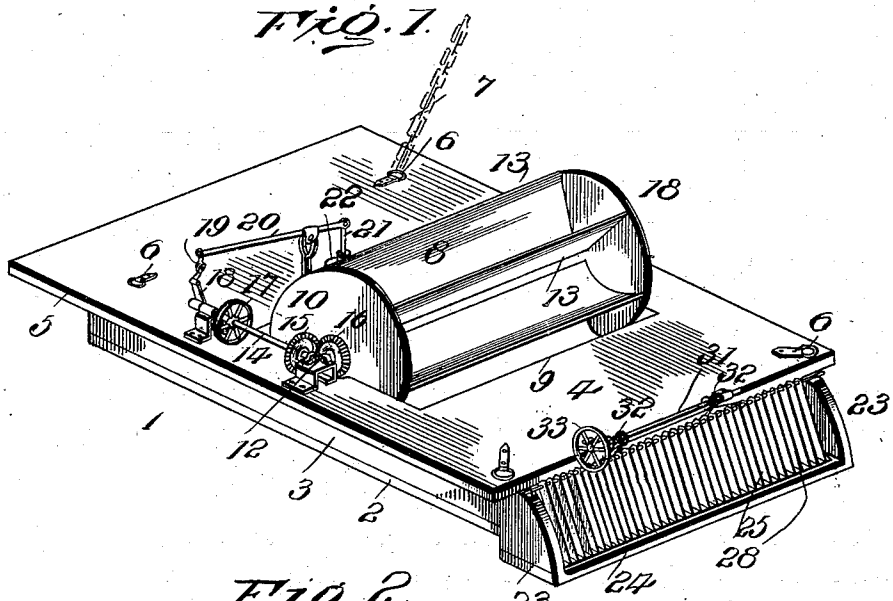
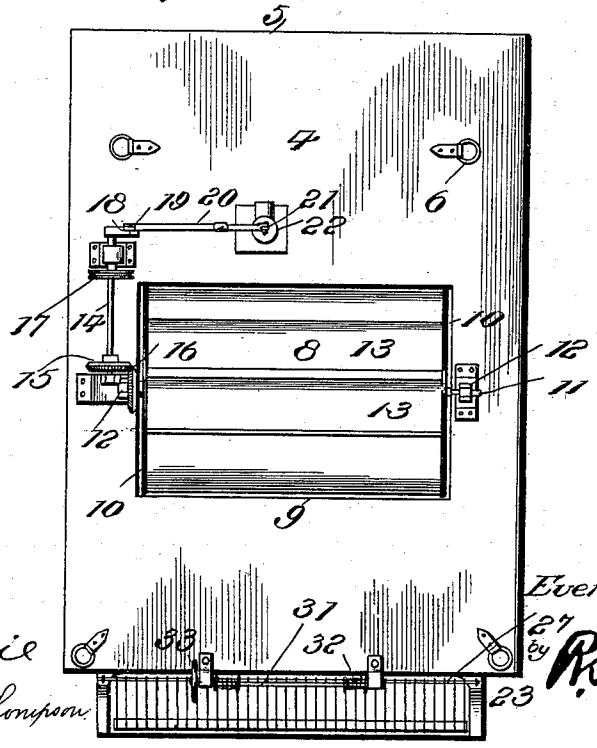


FIG. 2.



Witnesses

Jas. Imrie

Gladys L. Thompson.

Inventor

Ever Everson

by R. S. & A. B. Lacey

Attorneys

(E. NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.)

No. 657,528. Patented Sept. 11, 1900.

E. EVERSON.

WATER MOTOR.

(Application filed Mar. 13, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

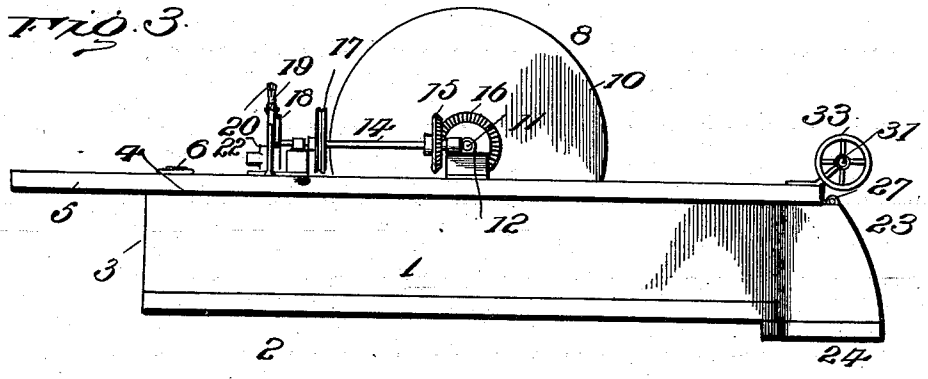


Fig. 4.

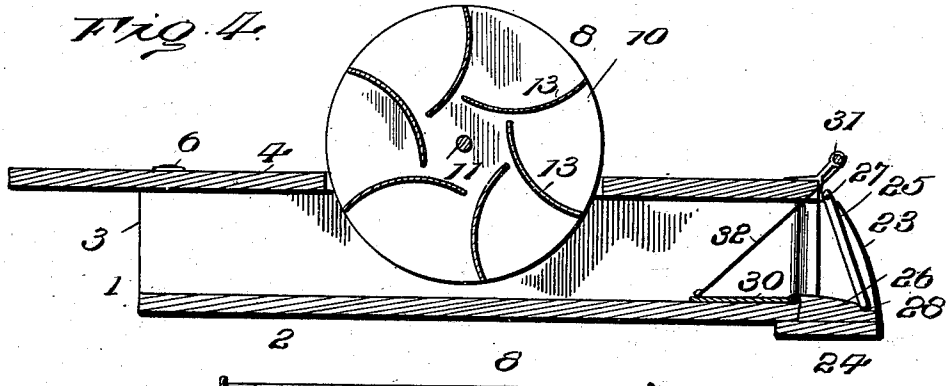


Fig. 5.

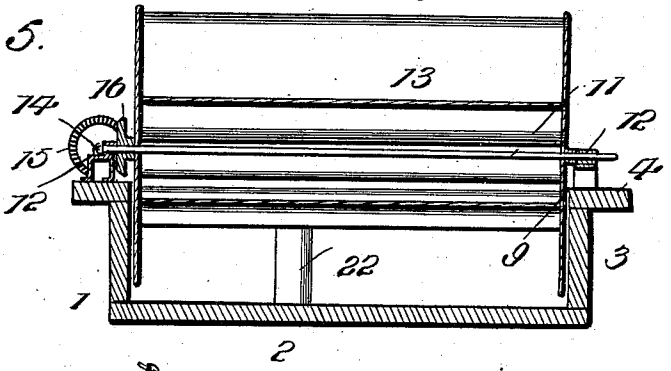
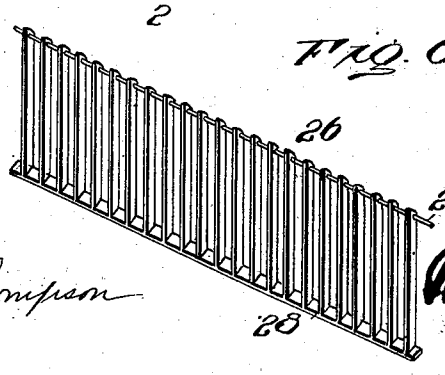


Fig. 6.



Witnesses

Jno. Imrie

Gladys L. Thompson

Inventor

Ever Everson

by

R. S. & S. Lacey

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EVER EVERSON, OF MANKATO, KANSAS.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 657,528, dated September 11, 1900.

Application filed March 13, 1900. Serial No. 8,506. (No model.)

To all whom it may concern:

Be it known that I, EVER EVERSON, a citizen of the United States, residing at Mankato, in the county of Jewell and State of Kansas, have invented certain new and useful Improvements in Water-Motors; 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.

This invention relates to improvements in hydraulic motors, and particularly to motors of that type embodying a water-wheel which is mounted upon a floating frame anchored at a suitable point in a river or running stream by chains or cables made fast to the banks thereof and provided with suitable gearing whereby the power derived from the operation of the wheel may be utilized for driving a pump for supplying water for irrigating purposes or for running machinery of any preferred kind.

The object of my invention is to provide a motor which is simple of construction and efficient in operation and designed to make provision for the effective floating of the frame and obviate all liability of injury to the wheel by logs, driftwood, and other like obstructions.

With these and other minor objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and specifically set forth in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a water-motor constructed in accordance with my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a side view. Fig. 4 is a longitudinal section. Fig. 5 is a cross-section. Fig. 6 is a perspective view of the fender-grate detached.

Referring now more particularly to the drawings, wherein like reference-numerals designate corresponding parts throughout the several views, the numeral 1 designates the float or supporting frame of the motor, which is made of a size to extend nearly across from bank to bank of the stream in which it is to be used and adapted to float upon and rise and fall with the water, so as to maintain the wheel immersed to a predetermined extent at all times and keep the working parts located a proper distance above the surface of the water to prevent the same from being injured by driftwood and other floating obstructions. This frame is preferably oblong and rectangular in form and composed of a bottom 2, sides 3, and a top or platform 4, thus forming a hollow box or chamber which is open at its ends for the flow of the water therethrough. The top or platform 4 is of greater width and length than the bottom and side pieces, so as to project beyond the opposite sides and rear or downstream end of the frame, as shown, such projecting portion 5 serving as a fin or buoying flange to increase the stability and bearing-surface of the float upon the water and counteract the tendency of the float to sink under the weight of the body of water passing through it. Adjacent to each corner of the float rings or eyes 6 are located, and to these are connected chains or cables 7, which extend to the banks of the stream and are made fast in any suitable manner to hold the float anchored at the desired point.

The water-wheel 8 is mounted to revolve in a transverse space or opening 9 in the top or platform 4 and extends down into the chamber of the float to near the bottom thereof, so as to receive the full impulse of the flowing water. This wheel comprises in its construction end heads or disks 10, rigidly mounted upon a shaft 11, journaled in bearings 12 upon the upper surface of the platform, and blades or floats 13, extending longitudinally between said heads and suitably connected thereto. These blades or floats are disposed in a circle around the shaft 11 and are curved transversely and arranged with their outer portions approximately upon radial lines and their inner portions tangential, the construction and arrangement being such that each blade occupies the position about at a right angle to and medially of the tangential inner portion of the preceding blade, thereby resulting in the force of the water being expended to the best possible advantage. A slight space is left between the inner edge of each blade and the side of the adjacent blade for the escape of air, which if confined would detract materially from the effectiveness of the motor.

The gearing employed in connection with the wheel for driving a pump to supply water for irrigating purposes or running machinery may be of any approved type. In the present instance I have shown a shaft 14 mounted upon the platform at one end of the wheel and carrying a bevel-gear 15, meshing with a corresponding gear 16 on the shaft 11, and a wheel or pulley 17 for transmitting power by means of a belt to machinery on shore. When it is desired to employ a pump for forcing water, one end of the shaft 14 may be extended and connected to a crank-arm 18, to which in turn is connected a link 19. This link is pivotally secured to said arm and to one end of a rocking lever 20, which is connected at its opposite end to the piston-rod 21 of the pump. The pump-cylinder 22 extends through the platform 4 and into the float-chamber and is provided at its upper end with a spout, to which a hose may be connected for conducting the water to the desired point. The operation of this mechanism will be readily understood.

The front or upstream end of the float has a framing applied thereto consisting of side pieces 23 and a bottom piece 24, and this frame houses a fender 25. A sill or bridge-piece 26 is placed upon the bottom piece 24 and extends in front of the bottom 2 of the float and is inclined upon its top side, which projects above the plane of the bottom 2 at its rear end to prevent the hinge end of the gate 30 obstructing the flow of the water and catching grass or other matter clearing the fender by passing between the slats thereof. The fender has a forwardly and downwardly inclined position and consists of a rod or shaft 27, mounted in bearings upon the upper ends of the side pieces 23, an inclined base plate or strip 28 and a series of spaced slats or metal plates rigidly connecting the shaft and base-strip. The fender is thus pivoted to tilt up to afford access to the float-chamber and permits the water to freely enter the chamber, while excluding logs, driftwood, and other objects which would be liable to injure the wheel. The flow of water through the float-chamber may be cut off to stop the wheel by means of a gate 30, pivotally mounted at its lower edge in rear of the fender to open inwardly. The gate is adapted to readily open under the pressure of the water, and to close it a shaft 31 is provided and mounted above the fender. This shaft is connected to the upper edge of the gate through the medium of ropes, cords, or cables 32, and a hand-wheel 33 is provided for operating the shaft to wind up said ropes, cords, or cables, and close the gate. By this construction of said parts the upstream end of the float-frame is adapted to effectually withstand the shocks produced by floating logs and other drift forced against it and the operative parts protected from injury.

It will of course be understood that changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new is—

1. In a water-motor of the character described, the combination of an open-ended chambered float, side and bottom pieces forming an inclosure at the upstream end of the float, an inclined bridge-piece placed upon the bottom piece of the said inclosure and extended forward of the bottom of the float with its rear portion in a higher plane than the said float-bottom, a water-wheel mounted at the top of the float and extending down into the chamber thereof, an inclined fender-grating pivotally mounted to tilt upwardly in said inclosure and adapted to abut against the bridge-piece which forms a stop therefor, a gate pivoted to the float in rear of the bridge-piece, and means for operating the gate from the exterior to cut off the flow of water, substantially as described.

2. In a water-motor of the character described, the combination of an open-ended chambered float, a water-wheel mounted upon the top of the float and extending down into the chamber thereof, a framing at the upstream end of the float, a sill applied to the bottom portion of the framing and inclined rearwardly and upwardly upon its top side and having its rear portion projecting above the plane of the bottom portion of the float, a gate adapted to fold upon the bottom of the float and pivoted in the rear of the said sill and protected thereby, and means for operating the gate, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EVER EVERSON. [L. S.]

Witnesses:

R. H. McBRIDE,

E. ELLINGSON.