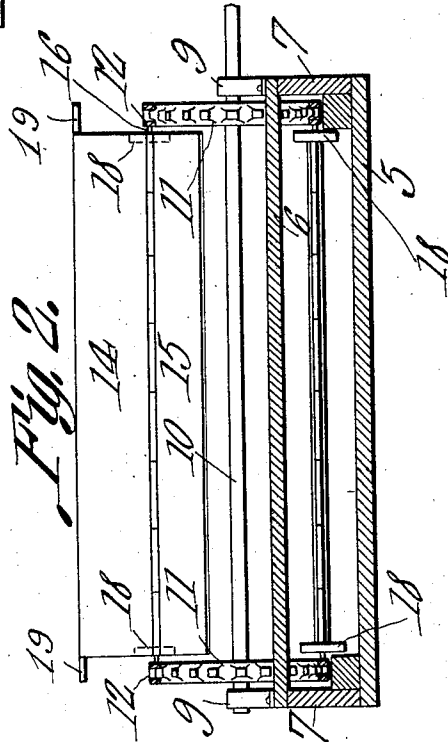
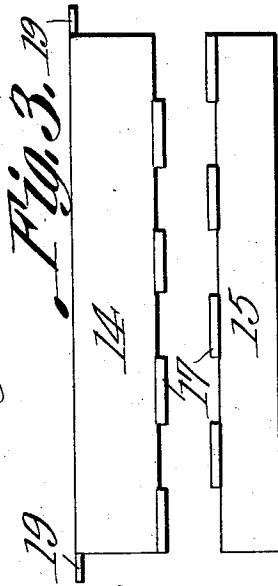
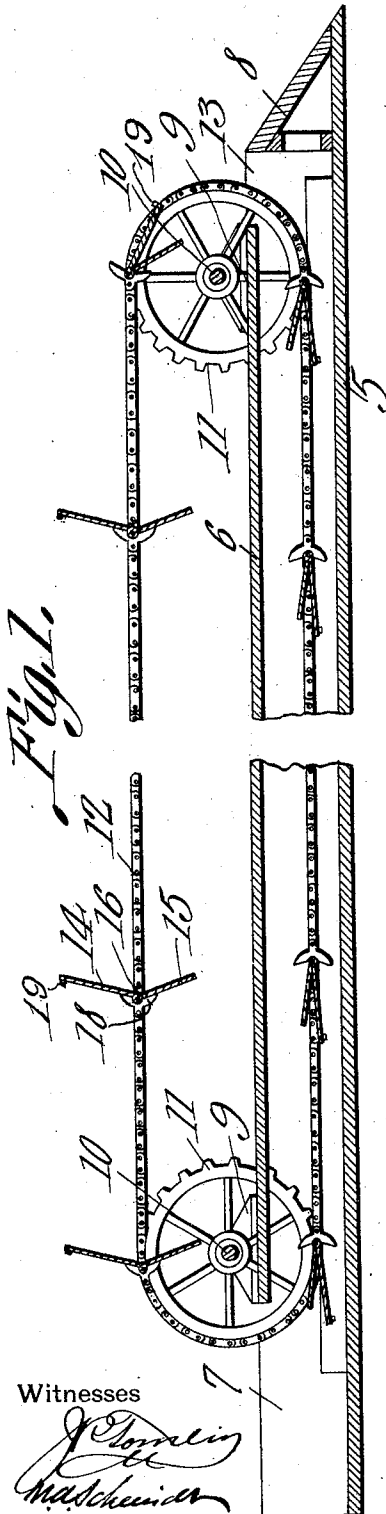


D. DREIER.
HYDRAULIC MOTOR.

APPLICATION FILED JULY 16, 1910. RENEWED FEB. 5, 1913.

1,058,950.

Patented Apr. 15, 1913.



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UNITED STATES PATENT OFFICE.

DOMINICK DREIER, OF SPRINGDALE, MONTANA.

HYDRAULIC MOTOR.

1,058,950.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed July 16, 1910, Serial No. 572,269. Renewed February 5, 1913. Serial No. 746,421.

To all whom it may concern:

Be it known that I, DOMINICK DREIER, a citizen of the United States, residing at Springdale, in the county of Park and State of Montana, have invented a new and useful Hydraulic Motor, of which the following is a specification.

This invention relates to that class of hydraulic motors which are designed to be anchored in a stream, so as to utilize the current thereof, and to either be submerged or placed so that they will float.

It is the object of the invention to provide a motor of the kind stated which is highly efficient in operation, and simple in construction, and to this end it consists in a novel construction and arrangement of parts to be hereinafter described.

It is also the object of the invention to provide a motor having feathering blades, and improved means for holding the blades in such a position that they may open up or swing into operative position at once upon again entering the current.

In the accompanying drawing, Figure 1 is a longitudinal section of the motor, and Fig. 2 is a transverse section. Fig. 3 is a face view of the parts constituting the impeller element.

The supporting frame of the motor comprises a bottom 5, a top 6, and side walls 7, the same forming a box-like structure, one end of which is open, and the opposite end being closed by an inclined wall 8. Near each end of this structure are bearings 9 in which are journaled transverse horizontal shafts 10. On each shaft is mounted a pair of spaced sprocket wheels 11, the sprocket wheels of one of the shafts being connected by chains 12 to the sprocket wheels of the other shaft. The sprocket wheels extend partly into the casing, the top wall 6 thereof being slotted for this purpose. By thus extending sprocket wheels into the casing, the lower run of the chains travel through the casing. One end of the casing is left open, and at the other end an opening 13 is made in the top wall 6 so that the chains may enter and leave the casing. These openings are sufficiently large to permit the impelling members carried by the chains to pass.

The impelling members comprise projecting blades or wings which are carried by the chains. Each member comprises two hinged sections 14 and 15, respectively, extending in

opposite directions from the chain. The sections are hinged at their inner ends on transverse rods 16 carried by the chains, said inner ends being formed with hinge knuckles 17 through which the rod extends. Behind each section, the chains carry stops 18 for limiting the swing of the sections in the direction the chains are running, said chains traveling in a direction indicated by the arrow in Fig. 1. The sections spread outwardly from the chains on the upper run thereof, in which position they extend across the current. The pressure of the current against the extended blades causes the chains to travel in the direction indicated, whereby the shafts 10 are put in motion. Any suitable gearing will be provided for transmitting the motion of either one, or both of said shafts.

When the blades pass around the forward sprocket wheels to enter the casing, they automatically feather as shown in Fig. 1. In this position they lie flat and close to the chains, and thus offer the least resistance to the travel thereof. Upon passing out of the casing on their return to the upper run, they are automatically spread out by the current so as to again extend in opposite directions from the chains, and thus receive the whole force of the current.

It will be noted that the front end of the casing is closed by the inclined wall 8, in view of which there will be no current in the casing. This inclined wall also deflects the water upwardly against the blades as they leave the casing, whereby the opening movement of said blades is facilitated.

From the side edges of the blade sections 14, at the outer ends thereof, project fingers 19 which come in contact with the chains as said blades are starting to enter the current after passing out of the casing, whereby the blades are held in position to receive the force of the current, and are prevented from dropping downwardly into pendent position between the chains. As soon as the current strikes a blade 14, it is swung forwardly to extend upwardly from the chains. The blade sections 15 extend downwardly from the upper run of the chains. The inclined wall 8 creates an upward current which is directed against the blade sections 14 as they leave the casing supported on the chains by the fingers 19 as described and shown in Fig. 1, and this upward current,

upon striking said blade, at once swings it into upright position to receive the full force of the current.

In operation, the machine will be held in place by means of cables attached to anchors, and so secured that the lower ends of the machine may be free, or it may be so mounted on the bed of the stream, that the current does not strike the blades squarely, but at a slight angle.

The machine may be of any length, and of any width to suit the location, and to furnish the desired power. It will preferably be entirely submerged so as to be out of the way of floating objects.

What is claimed is:

1. A current motor comprising a casing closed at one of its ends, endless chains and supports therefor carried by the casing, the lower run of the chains traveling in the casing, and said casing having openings through which the chains enter and leave the same, and impelling members carried by the chains.

2. A current motor comprising a casing closed at one of its ends, endless chains and

supports therefor carried by the casing, the lower run of the chains traveling in the casing, and the latter having openings through which the chains enter and leave the same, impelling members carried by the chains, stops on the chains for limiting the forward swing of the impelling members, and stops projecting from the blades and arranged to engage with the chains to limit the rearward swing of the members.

3. A current motor comprising a casing having one of its ends closed by an inclined wall, endless chains and supports therefor carried by the casing, the lower run of the chains traveling in the casing, and the latter having openings through which the chains enter and leave the same, and impelling members carried by the chains.

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

DOMINICK DREIER.

Witnesses:

E. M. NILES,
C. A. LE MARS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."