

No. 849,311.

PATENTED APR. 2, 1907.

J. C. AULD.  
CURRENT MOTOR.  
APPLICATION FILED SEPT. 6, 1906.

Fig. 1.

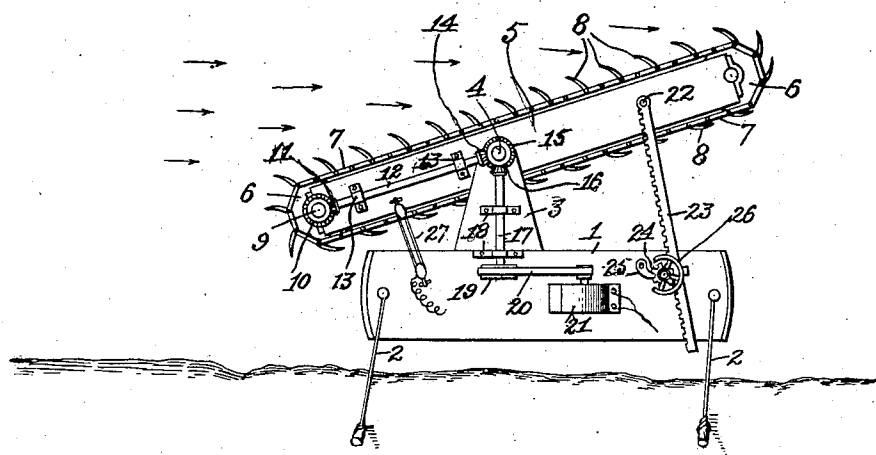
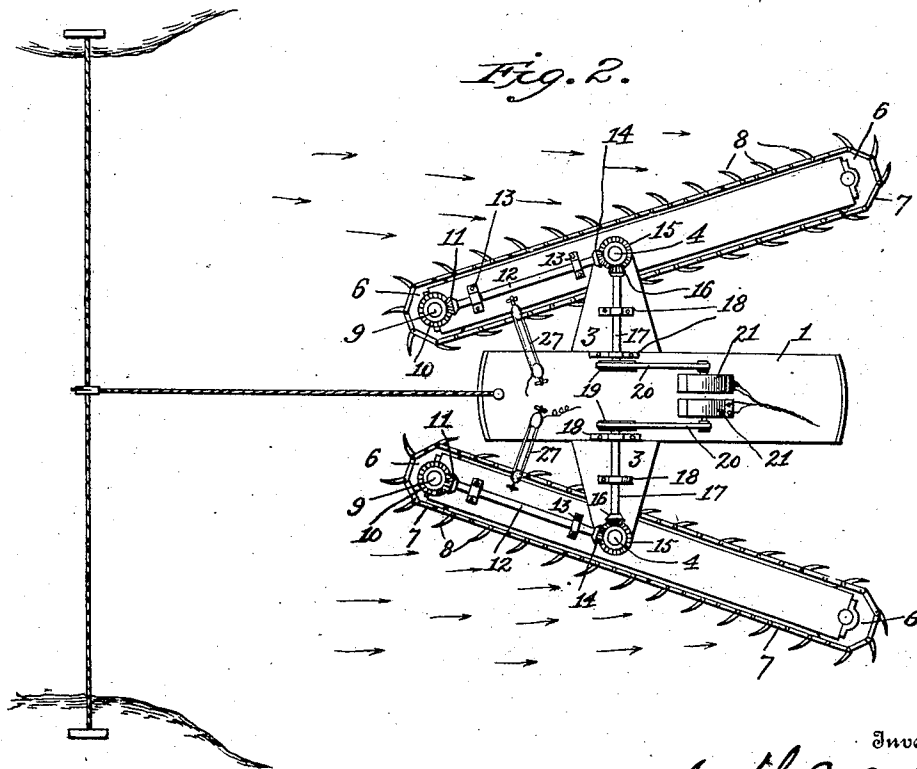


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH C. AULD, OF MILES CITY, MONTANA.

## CURRENT-MOTOR.

No. 849,311.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed September 6, 1906. Serial No. 333,530.

*To all whom it may concern:*

Be it known that I, JOSEPH C. AULD, a citizen of the United States, residing at Miles City, in the county of Custer, State of Montana, have invented new and useful Improvements in Current-Motors, of which the following is a specification.

My invention relates to motors for utilizing the power possessed by the currents of rivers or streams, and has for its object to provide certain improvements in the construction of the same, as will be hereinafter more definitely pointed out and claimed.

In the drawings accompanying this application, Figure 1 is a plan view of my improved device mounted on one side of a scow, the latter being moored to the bank of a river or stream. Fig. 2 is a similar view of a scow maintained at or near the center of the river or stream and carrying one of my improved motors on each side.

Similar numerals denote corresponding parts in the two views.

In the said drawings, referring more particularly to Fig. 1, the reference-numeral 1 denotes a floating scow of any suitable construction that is moored to one bank of a river or stream by means of suitable cables 2. Projecting from one side of said scow is a rigid extension 3, at the outer end of which is pivotally connected at 4 a float 5, carrying at each end a sprocket-wheel 6. Around said sprocket-wheels passes an endless sprocket-chain 7, carrying a series of feathering-blades 8, adapted to open in one direction under the force of the stream-current and to close in the other direction, said blades being of any construction suitable to accomplish this result. Fixed to the shaft 9 of one of the sprocket-wheels 6 is a gear-wheel 10, meshing with a gear 11, fixed to a shaft 12, mounted longitudinally of the float 5 to rotate in suitable brackets 13, said shaft carrying a gear 14 at its other end that meshes with a gear-wheel 15, mounted to rotate concentrically with the pivot 4 of the float 5. In mesh with said gear-wheel 15 is a gear 16, carried by a shaft 17, that is supported longitudinally of the extension 3 by brackets 18 and carrying a suitable drive-pulley 19, connected by a belting 20 with the drive-shaft of a dynamo 21 of any suitable construction. Pivoted at 22 to the float 5 to the rear of pivot-point 4 is a rack-bar 23, adapted to be permanently maintained in mesh with a pinion 24, mounted

on the scow 1, a suitable pawl 25 controlling the rotation of said ratchet and a suitable hand-wheel 26 providing for its manipulation. Also connecting the scow 1 and float 5 in front of the pivot-point 4 is a block-and-tackle connection 27.

From the above description the operation of my improved construction will be understood as follows: The scow 1 being suitably moored and the float 5 being adjusted on its pivot 4 by means of rack-bar 23 and block and tackle 27 to the desired angle with respect to the flow of the current, the feathering-blades 8, which are adjusted on float 5 to the desired depth in the water will rotate sprocket-wheels 6 in the usual manner, which motion will be transmitted to the dynamo 21 by the intermediate gearing, hereinbefore described, and the power generated thereby may be carried ashore for use in any desired manner.

It will be apparent that the speed of rotation of the sprocket-wheels 6, and consequently the speed of the dynamo 21, may be varied at will by varying the angle of the float 5 with respect to the stream-current, which can be done at any time through the rack-bar 23 and the block and tackle 27, and it will be apparent, further, that the movement of sprocket-chain 7 may be stopped when desired by drawing the rear end of float 5 inward toward the scow 1, thereby projecting its front end so that the line of travel of the stream-current will not exert its force on the blades 8 when in their open position. It will thus be seen that I am able to provide a current-motor that is capable of ready adjustment either to vary its speed or to check the same at will, the device being ready at all times to be immediately placed into or out of operation.

In Fig. 2 I have illustrated a construction whereby two floats 5 and their driving mechanism may be utilized from a single scow, said scow being moored in the center of the stream, either from a cross-cable 28, as shown, or by means of suitable anchors. As in the case of the single float 5, the double floats may be adjusted with respect to the stream-current either to vary the speed or to check the same entirely, and while I have shown only the block and tackle for effecting this adjustment it will be understood that, if desired, the rack-bars 23 may also be employed. In connection with the double-float construction I have shown two dynamos 21,

one for each float, the connections being the same as in the single-float construction.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A current-motor, embodying a base or support, a float pivotally connected thereto intermediate its ends, power-producing means on said float actuated by the stream-current, and means for adjusting said float angularly with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped according to the adjustment of said float with respect to said base or support.

2. A current-motor, embodying a relatively fixed base or support, an extension projecting from the same, a float pivoted intermediate its length to said extension, power-producing means on said float actuated by the stream-current, and means intermediate said base or support and said extension for adjusting said float on its pivot angularly with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped according to the adjustment of said float with respect to said base or support.

3. A current-motor, embodying a relatively fixed base or support, an extension projecting from the same, a float pivoted intermediate its length to said extension, power-producing means on said float actuated by the stream-current, a rack-bar connecting said base or support and float and pivoted to one of the same, and a ratchet-wheel for actuating said rack-bar for varying the angle of adjustment of said float with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped according to the adjustment of said float with respect to said base or support.

4. A current-motor, embodying a relatively fixed base or support, a float pivotally connected thereto and adjustable to vary its

angle with respect thereto, sprocket-wheels mounted in the ends of said float, a sprocket-chain connecting said sprocket-wheels, feathering-blades mounted on said sprocket-chain, and means for imparting the motion received from the stream-current through said blades, sprocket-chain and sprocket-wheels to a power-fixture on said base or support.

5. A current-motor, embodying a relatively fixed base or support, a float pivotally connected thereto and adjustable to vary its angle with respect thereto, sprocket-wheels mounted in the ends of said float, a sprocket-chain connecting said sprocket-wheels, feathering-blades mounted on said sprocket-chain, and means for imparting the motion received from the stream-current through said blades, sprocket-chain and sprocket-wheels to a power fixture on said base or support, embodying gearing centering on the pivot-point of said float.

6. A current-motor, embodying a relatively fixed base or support adapted to be located in the body of the stream, extensions projecting from each side of the same, a float pivoted intermediate its length on each of said extensions, power-producing means on each of said floats actuated by the stream-current, connections whereby the motion imparted to said power-producing means will be conveyed to power-fixtures on said base or support, and means for independently adjusting said floats on their pivots with respect to said base or support, whereby the movements of the power-producing means may be independently varied or stopped according to the adjustment of said floats with respect to said base or support.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH C. AULD.

Witnesses:

JAMES McMILLAN,  
HENRY PAGE.