June 17, 1930. J. J. BAKER 1,764,820

FLOATING POWER PLANT

Filed Nov. 21, 1927 2 Sheets-Sheet 1

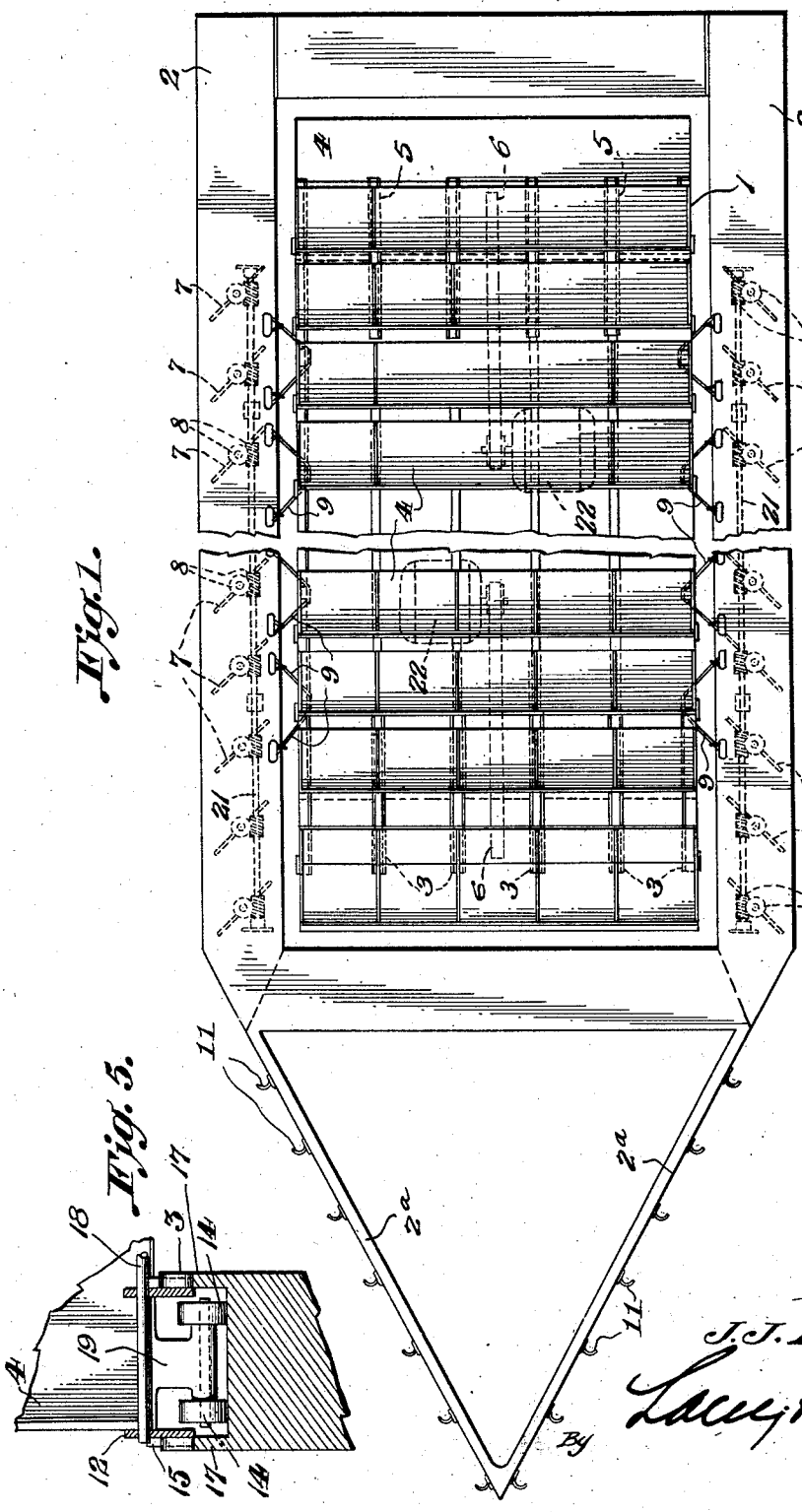


Fig. 1.



Fig. 7.

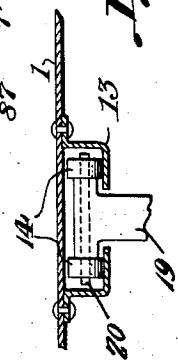


Fig. 6.

Fig. 5.

Inventor:
J. J. Baker.
Lacey & Lacey,
By
Attys.

June 17, 1930. J. J. BAKER 1,764,820

FLOATING POWER PLANT

Filed Nov. 21, 1927 2 Sheets-Sheet 2

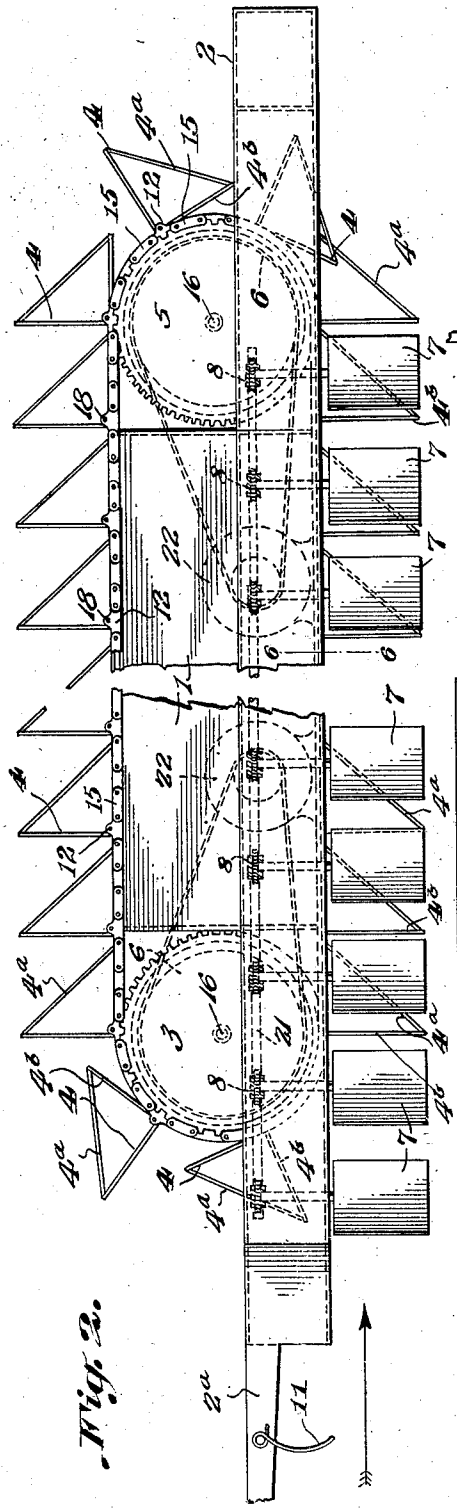


Fig. 2.

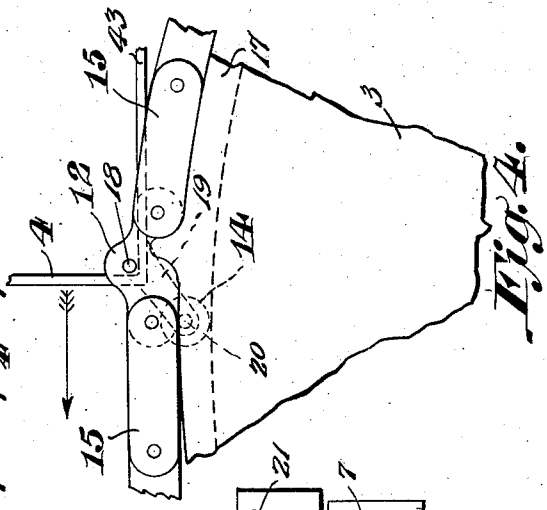


Fig. 4.

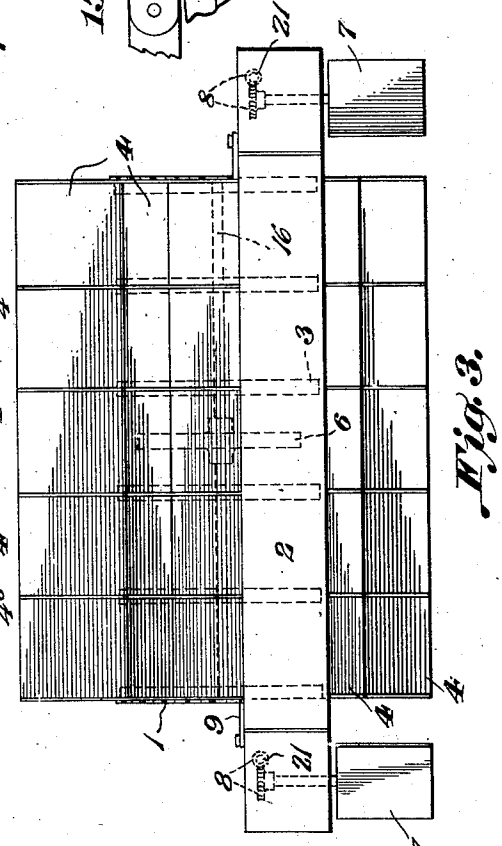


Fig. 3.

Inventor:
J. J. Baker.
By Lacey & Lacey, Attys.

Patented June 17, 1930 1,764,820

UNITED STATES PATENT OFFICE

JOSEPH JAMES BAKER, OF KOKOMO, INDIANA

FLOATING POWER PLANT

Application filed November 21, 1927. Serial No. 234,882.

The invention relates to the type of motors adapted to be floated in a body of water and actuated by the current or flow thereof.

The invention provides a current motor embodying a float which is adapted to be moored in a stream, a supporting frame sustained by the float, and operating means mounted upon the supporting frame and actuated by the current or flow of the water for developing power which may be utilized in any determinate way for operating machinery to be driven.

While the drawing illustrates a preferred embodiment of the invention, it is to be understood that in adapting the means to meet specific needs and requirements, the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and drawing hereto attached, in which:—

Figure 1 is a top plan view of a current motor embodying the invention, an intermediate portion being broken away.

Figure 2 is a side view showing the parts on an enlarged scale, and the forward portion of the deflector being broken away.

Figure 3 is a front view.

Figure 4 is an enlarged fragmentary view of a portion of a power chain and the support therefor.

Figure 5 is an enlarged fragmentary view partly in section of the parts illustrated in Figure 4.

Figure 6 is an enlarged detail sectional view on the line 6—6 of Figure 2.

Figure 7 is a fragmentary sectional view of the top portion of the supporting frame and a track thereon.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawing by like reference characters.

The numeral 1 denotes a supporting frame which may be of any determinate construction best adapted for receiving and sustaining the operating parts. This supporting frame or structure may be buoyant so as to float in the water in which the motor may be placed. The size of the supporting frame will depend largely upon the capacity of the motor and its general design. The operating mechanism is mounted upon the frame 1 and includes a plurality of endless chains 15 and wheels 3 and 5. The respective sets of wheels 3 and 5 are mounted upon shafts 16 disposed at opposite ends of the frame 1, said wheels being fast to the shafts to rotate therewith. The supporting wheels for the drive chains 15 are grooved or channeled in their periphery to form side flanges 17 which are toothed to engage the ends of the outer links of the respective drive chains. The inner links of the drive chains are disposed adjacent the inner faces of the flanges 17, as shown most clearly in Figure 5 of the drawings. The outer links comprising the drive chains are disposed in the plane of the flanges 17 so that their ends will engage the teeth formed upon the outer edge of the flanges.

Certain links, as 12, of the drive chains, are wide and support transverse rods 18 which serve to connect the drive chains and cause them to travel in unison. Blades 4^b are mounted upon the rods 18 and lie horizontally upon the top of the structure 1 and hang vertically from the bottom of the structure to receive the pressure of the water. Each of the blades 4^b is braced in line with each of the drive chains 15 and this brace includes members 4 and 4^a. The members 4 are at a right angle to the blades 4^b and the members 4^a connect the outer ends of the blades 4^b and members 4. These blades turn when passing around the toothed wheels 3 and 5 and, as stated, lie horizontal at the top and depend vertically at the bottom, as indicated most clearly in Figure 2 of the drawings. A track 10 is associated with each of the drive chains and is located upon the top of the frame 1 in position to be engaged by the blades 4^b as they pass over the top of the structure. The track 10 preferably consists of a metal strip. A corresponding track 13 is provided upon the

bottom 5 of the frame 1 to which it is attached in any substantial and determinate way. A track 13 is provided for each of the drive chains and comprises similar strips transversely spaced and formed with inwardly disposed flanges which are spaced from the bottom 5 of the frame 1, as indicated most clearly in Figure 6 of the drawings.

A bracket 19 projects from each of the blades 4^b and terminates in a bearing in which is mounted an axle 20 the ends of which project and receive small wheels 14 which are adapted to engage the bottom of the groove or channel formed in the drive chain supporting wheels, as indicated most clearly in Figure 5 of the drawings, and the inwardly disposed flanges of the strips comprising the track 13, as shown most clearly in Figure 6 of the drawings. In this manner the blades 4^b are supported as they pass around the wheels 3 and 5 and are suspended as they travel along the bottom side of the frame 1.

A float 2 is provided to receive the frame 1 and may be of any determinate construction and is hollow to accommodate the frame 1 which is connected thereto by latchings 9. Outwardly converged members 2^a are located at the front of the float and receive deflectors 11 upon their outer sides. The members 2^a are adapted to occupy a position at the surface of the water to direct drift laterally and prevent its catching upon the blades 4^b of the drive mechanism. The deflectors 7 are located along the sides of the float 2 and are pivoted to turn about vertical axes. A longitudinal shaft 21 is disposed at each side of the float and is connected to the deflectors 7 by worm gearing and thereby admitting of the series of deflectors 7, at each side of the float, being simultaneously adjusted to direct the current or flow of water inwardly towards the blades 4^b to insure the development of a maximum amount of water.

Electric generators 22 are mounted upon the frame 1 and are connected to the shafts 16 to receive movement therefrom. When the device is functioning properly the current created by the generators 22 is utilized in any determinate way for operating machinery to be driven. Obviously the electricity may be stored in any usual way for future use. A pulley 6 fast to each of the shafts 16 is connected to the armature of the generator, or other part to be driven, in the development of power for use in any determinate way.

The device is suitably located in a stream or other body of water to be operated by the current or flow thereof. When positioned the device is moored or anchored in any preferred way so that the end of the float 2 is provided with the drift deflectors 11 will face upstream or in the direction of the flow of the current. The water expends its force upon the blades 4^b of the power chains facing downwardly, thereby compelling the power chains to travel in a counter clock-wise direction. The movement thus imparted to the power chains rotates the shafts 16 and drives the generators 22. The power thus created is utilized in the manner stated for operating any mechanism to be driven, or in any preferred way in the industrial arts.

Having thus described the invention, I claim:—

1. In a water power plant having blades engaged by the water, the combination with a wheel grooved in its periphery to provide side flanges having their outer edges toothed, of connected chains, one for each of the flanges and comprising inner and outer links, the outer links being in the plane of the flanges and coacting with the teeth thereof, and the inner links being disposed to engage the inner faces of the flanges to prevent lateral movement of the connected chains, the inner links having extensions to which the blades are connected.

2. In a water power plant having blades engaged by the water, the combination with a wheel grooved in its periphery to provide side flanges having their outer edges toothed, of connected chains, one for each of the flanges and comprising inner and outer links, the outer links being in the plane of the flanges and coacting with the teeth thereof, and the inner links being disposed to engage the inner faces of the flanges to prevent lateral movement of the connected chains and having extensions to which the blades are connected, brackets carried by the chains, and wheels on the brackets spaced inwardly from the chains and adapted to travel on the grooved periphery of the wheel between the toothed flanges.

JOSEPH JAMES BAKER.