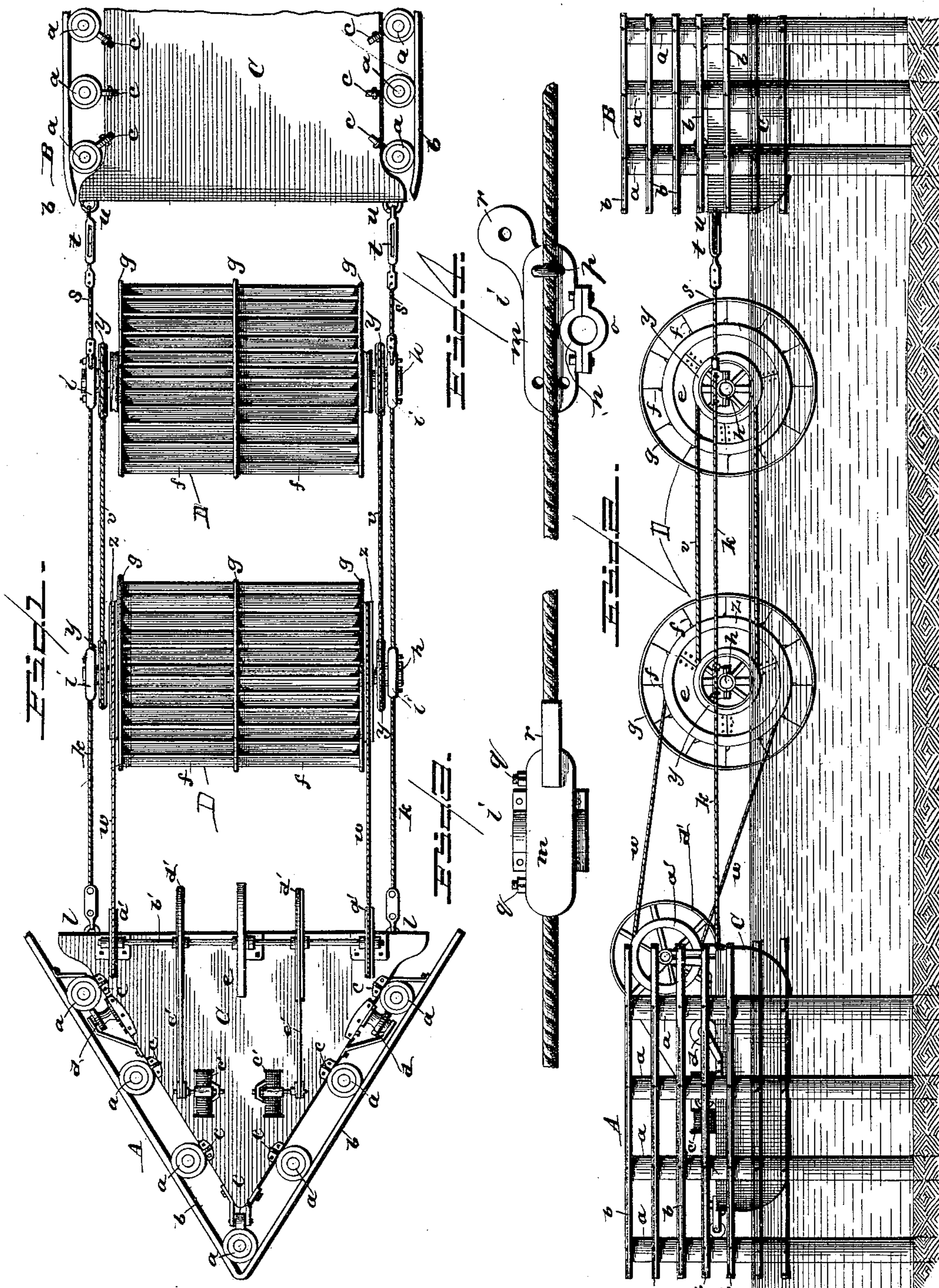


(No Model.)

E. SUCKOW.
SURFACE CURRENT OR TIDE MOTOR.

No. 405,722.

Patented June 25, 1889.



WITNESSES
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UNITED STATES PATENT OFFICE.

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SURFACE-CURRENT OR TIDE MOTOR.

SPECIFICATION forming part of Letters Patent No. 405,722, dated June 25, 1889.

Application filed January 2, 1889. Serial No. 295,173. (No model.)

To all whom it may concern:

Be it known that I, EDMUND SUCKOW, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Surface-Current or Tide 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.

My invention relates to motors, and has for its object the construction of a motor to utilize the power of bodies or streams of water, whether of the class in which there is a rapidly-flowing current or in which tide ebbs and flows. The motor is designed to float upon the surface of the water and to rise and fall with it, and the power of the water is transmitted from the motor to the shore through suitable mechanical means.

The invention will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a plan view of my invention; Fig. 2, a side view thereof; Fig. 3, an enlarged plan view of the sliding journal-bearing for supporting the water-wheels, and Fig. 4 is a side view of the same.

Reference being had to the drawings and the letters thereon, A indicates a triangular pier formed by piles *a* driven into the bed of a river, or it may be formed by constructing a foundation of masonry and the piles secured therein. In this pier the apex of the triangle is in the direction of the flow of the current of the water. The piles are placed a suitable distance apart to afford a free and ready passage of water between them, and they are girded by bands or bars *b*, which form a guard against the passage between the piles of floating bodies of wood or ice, which might injure the wheels.

B indicates another pier formed in the same manner, except that the piles *a* are in parallel rows, and is designed to be used in connection with pier A in streams or channels in which the water always flows in one direction. Where the water flows in opposite directions it is deemed preferable to use a triangular pier A at each end of the structure

to guard and protect the wheels in either direction the water may be flowing.

C indicates platforms, which are placed between the piles *a* of the piers A and B, and are provided with rollers *c*, which bear against the piles to reduce friction and to guide the platforms in their ascent and descent as the water in the channel rises and falls. The platform between the piles in the triangular pier is secured against longitudinal movement by the large rollers *d d*, which bear against the inner surface of the two end piles forming the pier, and the platform in the parallel pier is secured by placing the rollers in such an angular relation to each other on opposite sides of the pier that they brace or lock the platform against such movement.

D indicates floating wheels, of which there may be any number desired, and are constructed with a body portion or drum *e*, consisting of sections or water-tight compartments, and to the outer surface of the cylindrical body are secured the blades or paddles *f* in any suitable manner. The blades are secured together by bands *g*, which surround them at proper distances to render them rigid. The drums of the wheels may be made of sheet metal properly divided into air-tight compartments to make them float, or they may be constructed of wood. The wheels D are each mounted upon a shaft *h*, which is supported at each end in a sliding bearing *i*, attached to the cables *k k*, by which the wheels D are secured to the platform C in the triangular pier A by means of the connections shown at *l l*.

The bearing *i* consists of a bar or body portion *m*, having a transverse half-bearing *n* formed thereon, a detachable cover *o*, forming the other half of the bearing, and staples *p*, which pass through the body *m* transversely and clamp the cables to the body by means of nuts *q* on the ends of the staples. The bearings of the last wheel in a series are provided with an extension *r*, which engages with a hook or a corresponding part on one end of the short cables *s*, by which the motor is secured to the platform in the pier B, and forms a swinging joint or hinge, which accommodates itself to the motion of the wheels and the platform. Should any slack occur in the cables, it is taken up by the swivels or

turn-buckles *t t*, which may be secured to the platform, as shown at *u u*, and turned by means of a bar; or they may be secured to a capstan (not shown) on the platform.

5 Power is transmitted from the wheels D by means of cables *v v w w*, which run in grooved pulleys *y y z z* on the shafts of the wheels to pulleys *a' a'* on the power or driving shaft *b'* on the platform of the pier A, and from this
10 shaft the power is transmitted to dynamos *c' c'* or other power-receiving medium by the pulleys *d' d'* and belts *e' e'*, and from the dynamos power is transmitted to the shore through wires, in the usual manner.

15 Power may be transmitted from the motor to the shore, in narrow streams or channels, by extending the power-shaft to the bank of the stream; or gearing and cables may be employed; or it may be transmitted from either
20 or both platforms. I do not, therefore, limit myself to the special means shown for the purpose, but use it as an illustration of the means for accomplishing the purpose.

Having thus fully described my invention
25 what I claim is—

1. A current or tide motor consisting of two open piers, movable platforms in said piers, and a floating wheel or wheels interposed between the piers, in combination with suitable
30 means for transmitting the power of the motor, substantially as described.

2. A current or tide motor consisting of an open pier, a movable platform secured and guided in the pier by wheels bearing against
35 the pier, and a floating wheel secured to the pier, in combination with suitable means for

transmitting power from the motor, substantially as described.

3. A current or tide motor consisting of an open triangular pier, an open parallel pier, 40 platforms in said piers, and a floating wheel between the piers supported on cables attached to the platforms, substantially as described.

4. A current or tide motor consisting of piers 45 and a floating wheel suspended upon cables by means of sliding journal-bearings secured to the cables, substantially as described.

5. A current or tide motor consisting of open piers, vertically-adjustable platforms, and a 50 floating wheel secured to the piers by means of a flexible connection, in combination with suitable means for transmitting power from the motor, substantially as described.

6. A current or tide motor consisting of open 55 piers, platforms secured to the piers, and a floating wheel, in combination with cables for supporting the wheel, and a device for stretching the cables, substantially as described.

7. In a current or tide motor, a floating 60 wheel supported upon cables, in combination with sliding journal-bearings provided with a clamping device for securing the wheel in position upon the cables, substantially as described. 65

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

EDMUND SUCKOW.

Witnesses:

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