W. L. WEED.

WAVE MOTOR.

APPLICATION FILED MAY 2, 1918.

1,315,692.

Patented Sept. 9, 1919.

Fig. 1.

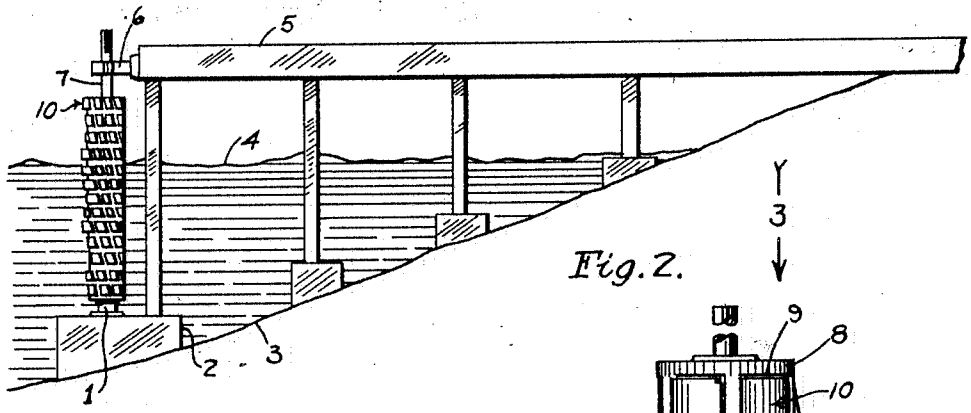


Fig. 2.

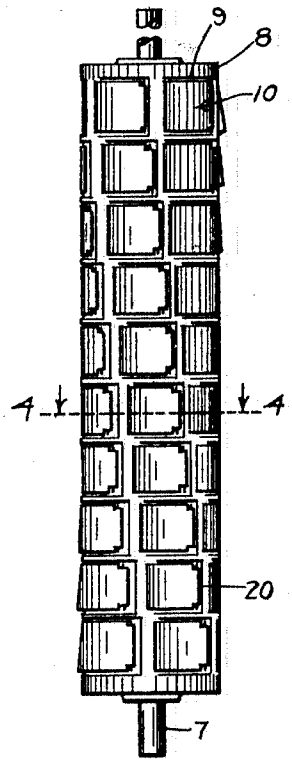


Fig. 3.

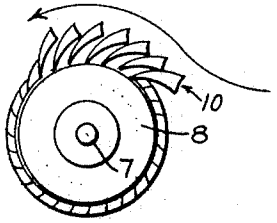


Fig. 4.

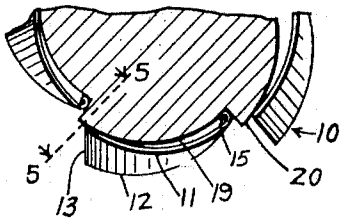
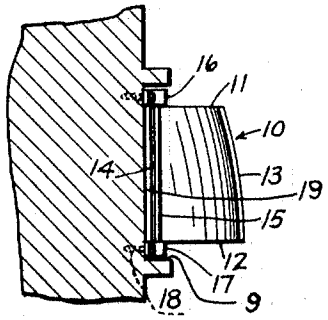


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM L. WEED, OF SANTA ANA, CALIFORNIA, ASSIGNOR OF ONE-FIFTH TO HENRY FRANK KAELIN, OF SANTA ANA, CALIFORNIA.

WAVE-MOTOR.

1,315,692. Specification of Letters Patent. Patented Sept. 9, 1919.

Application filed May 2, 1918. Serial No. 232,121.

To all whom it may concern:

Be it known that I, WILLIAM L. WEED, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented new and useful Improvements in Wave-Motors, of which the following is a specification.

My invention relates to wave motors and consists in the novel features herein shown, described and claimed.

Figure 1 is a side elevation showing a wave motor embodying the principles of my invention mounted upon a foundation and pier extending from the shore into the ocean.

Fig. 2 is an enlarged detail elevation of the wave motor.

Fig. 3 is a top end view as indicated by the arrow 3 in Fig. 2.

Fig. 4 is a fragmentary enlarged cross section on the line 4—4 of Fig. 2.

Fig. 5 is a fragmentary vertical sectional detail on the line 5—5 of Fig. 4.

A vertical thrust bearing 1 is mounted upon the foundation 2, said foundation being built in and upon the shore 3 below the surface of the water 4, and the pier 5 extends from the dry land outwardly to a point above the foundation 2 and the upper bearing 6 is mounted upon the pier 5.

The wave motor shaft 7 is vertically mounted through the bearing 6 and in the thrust bearing 1. The rotating head 8 is fixed upon the shaft 7, said rotating head being cylindrical in outline. A series of feathering blade pockets 9 is formed in the periphery of the head 8, said pockets being arranged in horizontal rows around the head and in winding rows up and down the head, and the feathering blades 10 are hingedly mounted in the pockets 9. The blades 10 are substantially rectangular in side elevation and the blades are curved in top and bottom plan and the free edges of the blades are twisted when seen from the edge. Preferably all the blades are alike and are twisted in the same direction, so that the upper edges 11 will strike the periphery of the head 8 and hold the lower edges 12 outwardly from the head so that the front or outer vertical edges 13 are inclined or winding relative to the axis of the head, and the rear edges 14 are straight.

If the blades 10 are made of sheet metal the rear edges 14 will be rolled to form bearings for the hinge pins 15, said hinge pins projecting upwardly and downwardly beyond the edges 11 and 12. Bearing blocks 16 and 17 fit the extending ends of the pins 15 and said bearing blocks are secured in the recesses by screws 18.

The faces 19 of the recesses are eccentric to the axis of the head 8, thereby producing shoulders 20 back of the bearing blocks 16 and 17, said shoulders 20 serving to limit the outward swing of the blades 10 upon their hinges.

When the water is flowing in the direction indicated by the arrow in Fig. 3 the edges of the blades which are toward the advancing water will catch the water and the blades will be thrown outwardly and the diametrically opposite blades will be thrown inwardly. It is obvious that the head will be rotated by the advancing and receding water no matter what direction it comes from or in which direction it goes.

Various changes may be made in the details of construction without departing from the spirit of my invention as claimed.

I claim:

1. A wave motor comprising a pier extending from a shore above the water line into the water; a foundation under the water end of the pier in the water; a vertical thrust bearing mounted upon the foundation, an upper bearing mounted upon the pier; a shaft mounted through the upper bearing and extending into the thrust bearing; a rotating head fixed upon the shaft, said rotating head being cylindrical in outline and having a series of pockets formed in its periphery, said pockets being arranged in horizontal rows around the heads and in winding rows up and down the head; and feathering blades hingedly mounted in the pockets.

2. In a wave motor; a shaft; a rotating head fixed upon the shaft, said rotating head being cylindrical in outline and having a series of feathering pockets formed in its pe-

riphery, said pockets being arranged in horizontal rows around the head and in winding rows up and down the head; feathering blades hingedly mounted in the pockets, said blades being substantially rectangular in side elevation and curved in top and bottom plan and the free edges of the blades being twisted, so that the upper edges of the blades will strike the periphery of the head and hold the lower edges outwardly from the head; and there being shoulders in the pockets at the hinged sides of the blades to limit the outward swing of the blades.

In testimony whereof I have signed my name to this specification.

WILLIAM L. WEED.

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