D. M. BARTEAU.

WAVE MOTOR.

APPLICATION FILED SEPT. 1, 1910.

991,264.

Patented May 2, 1911.

2 SHEETS—SHEET 1.

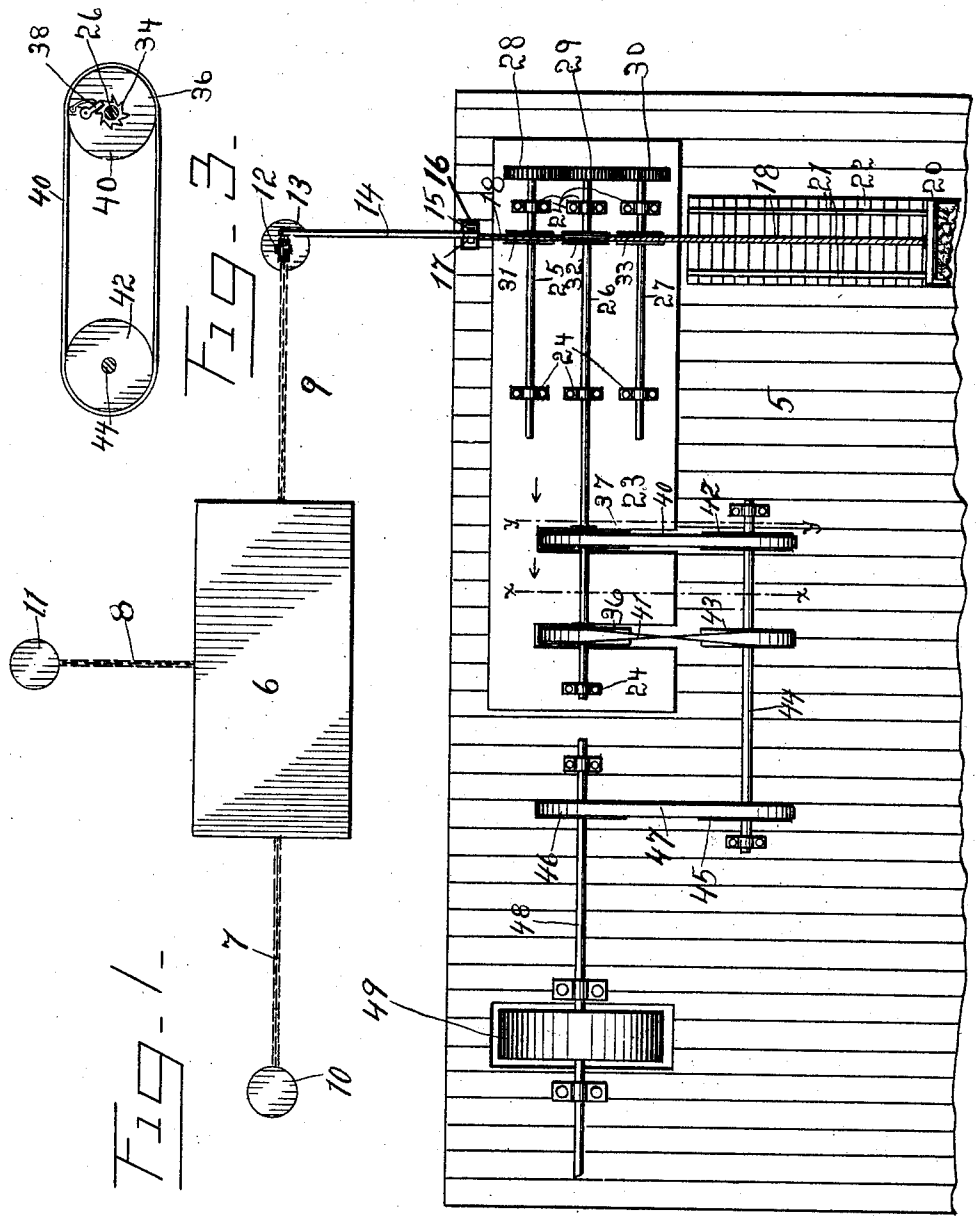

Fig. 3.

Fig. 1.

Witnesses
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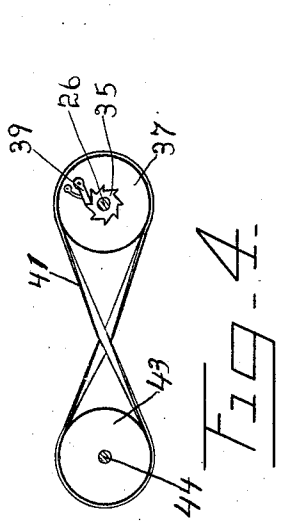

Fig. 4.

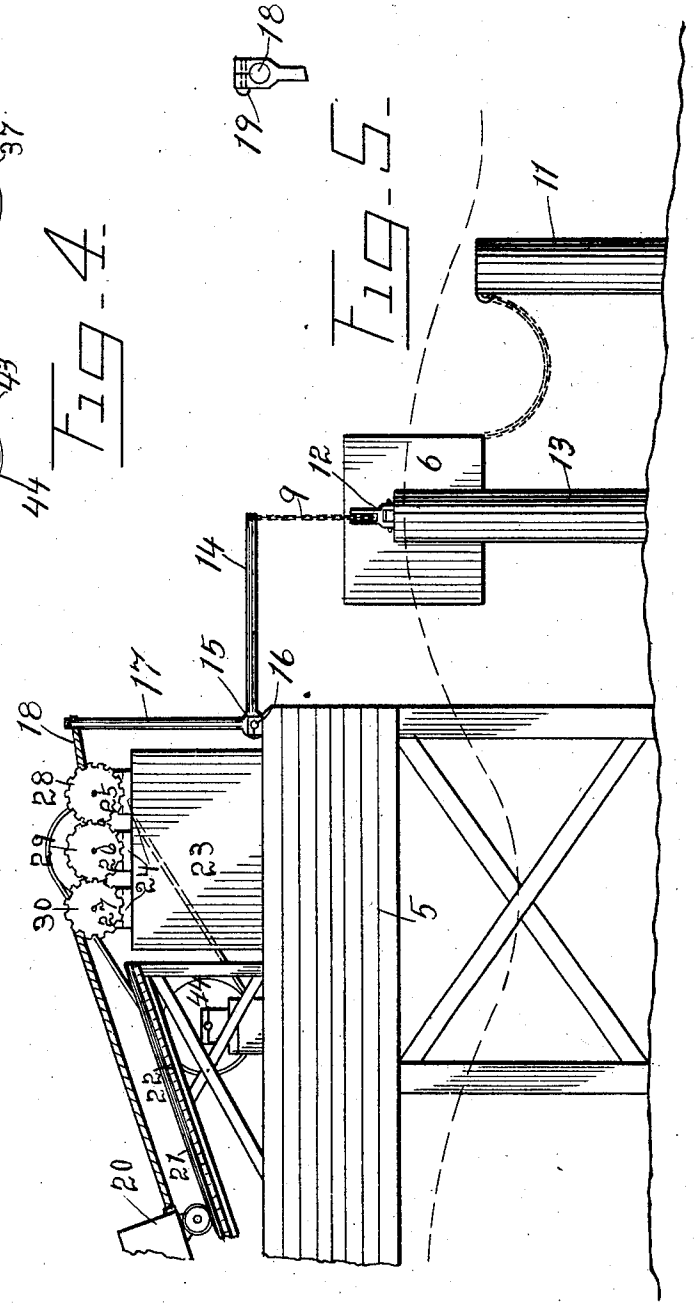

Fig. 5.

Fig. 2.

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UNITED STATES PATENT OFFICE.

DAISY M. BARTEAU, OF CORONADO, CALIFORNIA.

WAVE-MOTOR.

991,264. Specification of Letters Patent. Patented May 2, 1911.

Application filed September 1, 1910. Serial No. 580,029.

To all whom it may concern:

Be it known that I, DAISY M. BARTEAU, a citizen of the United States of America, residing at Coronado, in the county of San Diego and State of California, have invented certain new and useful Improvements in Wave-Motors, of which the following is a specification.

This invention relates to wave motors and has for its object the provision of improved means for imparting to a power shaft, continuous rotary movement in one direction by means of the energy derived from the motion of the ocean's waves.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawings, Figure 1 is a plan view of a wave motor constructed in accordance with the invention, Fig. 2 is an end elevation thereof, Fig. 3 is a detail section upon line *y*—*y*, of Fig. 1, Fig. 4 is a like section upon line *x*—*x* of Fig. 1, and, Fig. 5 is a detail view of a connection between one arm of a bell crank lever and a cable, hereinafter described.

Like numerals designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, the numeral 5 designates a pier. A float 6 located adjacent this pier is held in proper position by chains 7, 8, and 9. The chains 7 and 8 are connected directly to fixed anchors 10 and 11 which are shown as posts or piles, though other forms of anchors may be employed. The chain 9 passes over a pulley 12 supported upon an anchor post or pile 13, the end of said chain being connected to one of the arms 14 of a bell crank lever. This bell crank lever is pivoted at 15 in a bracket 16 mounted upon the pier 5. The other arm 17 of the bell crank lever is split for the reception of one end of a cable 18, a binding screw 19 serving to clamp the split portion of said arm 17 upon said cable. The opposite end of the cable 18 is secured to a car 20 which travels upon a trackway 21 of an inclined plane 22, the car being preferably loaded to cause it to serve as a weight. A base block 23 is mounted upon the pier 5 and in turn has mounted thereon, bearing brackets 24 in which shafts 25, 26, and 27 are journaled. These shafts carry intermeshing spur gear wheels 28, 29, and 30 and they also carry grooved pulleys 31, 32, and 33. The cable 18 passes over the grooved pulley 31, under the grooved pulley 32, and over the grooved pulley 33.

It is apparent that by virtue of this construction, the rise and fall of the float will, through the medium of the chain 9, impart a rocking movement to the bell crank lever and that this will in turn impart a back and forth movement to the cable 18 and the weighted car 20. The movement of the cable over the pulleys 31, 32, and 33 will impart a back and forth, or alternating rotary movement to the shafts 25, 26, and 27. The object sought is to impart this alternating rotary movement to the shaft 26. The shafts 25 and 27 serve however, by means of their grooved pulleys 31 and 33, to not only hold the cable 18 into close operative relation to the pulley 32, but in addition, the gear wheels 28 and 30 transmit the energy derived from the passage of the cable 18 over the pulleys 31 and 33 to the gear 29 and consequently to the shaft 26 by which said gear is carried. Fast upon the shaft 26 are ratchet wheels 34 and 35. Pulleys 36 and 37 are loosely mounted upon the shaft 26 adjacent these ratchet wheels and carry pawls 38 and 39 which engage the ratchet wheels. A straight belt 40 and a cross belt 41 pass from these pulleys 36 and 37 over pulleys 42 and 43 that are fast upon a counter-shaft 44. This counter-shaft is belted by means of pulleys 45 and 46 and a belt 47, to a power shaft 48, which preferably carries a balance wheel 49.

With the shaft 26 turning to the left, rotation to the left will be imparted to the pulley 36 and since the belt 40 is a straight belt, rotation to the left will be imparted to the shaft 44 and rotation to the left will be imparted thence to the shaft 48. When the direction of rotation is reversed and it is turning to the right, rotation to the right will be imparted to the pulley 37, but since the belt 41 is a cross belt, rotation to the left will be imparted to the pulley 43, and the shaft 44, and thence to the power shaft 48.

While I have designated the member 18

a cable, and shown it in connection with grooved pulleys, it is of course apparent that a belt may be utilized in place of this cable.

It will therefore be apparent that the present invention comprises simple and efficient means for utilizing the power of the ocean's waves and for changing the intermittent motion thereof into continuous rotary movement of a shaft in one direction.

While the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

Having described my invention, what I claim is:

1. The combination with a support, of a plurality of shafts mounted thereon, interengaging gears carried by said shafts, a flexible member, pulleys carried by said shafts, said flexible member passing over all of said pulleys, a float, connections between said float and said flexible member, a continuously rotating shaft, and connections between said continuously rotating shaft and one of the first named shafts, whereby alternate rotation of said first named shaft imparts continuous rotation to the continuously rotating shaft.

2. The combination with a support, of a plurality of shafts mounted thereon, interengaging gears carried by said shafts, a flexible member, pulleys carried by said shafts, said flexible member passing over all of said pulleys, a float, connections between said float and said flexible member, a continuously rotating shaft, connections between said continuously rotating shaft and one of the first named shafts, whereby alternate rotation of said first named shaft imparts continuous rotation to the continuously rotating shaft, and a weighted member connected to one end of said flexible member.

3. The combination with a support, of a plurality of shafts supported thereon and lying substantially parallel with each other, interengaging gears carried by said shafts, pulleys carried by said shafts, a flexible member passing over all of said pulleys, a float, a connection between said float and one end of said flexible member, and a weighted member connected to the other end of said flexible member.

4. The combination with a support, of a plurality of shafts supported thereon and lying substantially parallel with each other, interengaging gears carried by said shafts, pulleys carried by said shafts, a flexible member passing over all of said pulleys, a float, a connection between said float and one end of said flexible member, a weighted member connected to the other end of said flexible member, and an inclined plane mounted upon said support and upon which said weighted member is mounted to travel.

5. In a device of the character described, the combination with a float, of a plurality of fixed anchors, flexible members leading from said float to said fixed anchors, a flexible member leading from said float over a fixed pulley, a pivotally mounted bell crank lever to one arm of which said last named flexible member is connected, a cable connected to the other arm of said bell crank lever, a plurality of pulleys over which said cable passes, and a weighted member connected to the other end of said cable.

6. In a device of the character described, the combination with a float, of a plurality of fixed anchors, flexible members leading from said float to said fixed anchors, a flexible member leading from said float over a fixed pulley, a pivotally mounted bell crank lever to one arm of which said last named flexible member is connected, a cable connected to the other arm of said bell crank lever, a plurality of pulleys over which said cable passes, a weighted member connected to the other end of said cable, a plurality of shafts by which said pulleys are carried, and a plurality of gear wheels carried by said shafts and intermeshing with each other.

7. In a device of the character described, the combination with a float, of a plurality of fixed anchors, flexible members leading from said float to said fixed anchors, a flexible member leading from said float over a fixed pulley, a pivotally mounted bell crank lever to one arm of which said last named flexible member is connected, a cable connected to the other arm of said bell crank lever, a plurality of pulleys over which said cable passes, shafts by which said pulleys are carried, a weighted member connected to the other end of said cable, a continuously rotating shaft, and connections between said continuously rotating shaft and one of the first named shafts for changing intermittent rotary movement of said first named shaft into continuous rotary movement of the continuously rotating shaft.

8. In a device of the character described, the combination with a float, of a plurality of fixed anchors, flexible members leading from said float to said fixed anchors, a flexible member leading from said float over a fixed pulley, a pivotally mounted bell crank lever to one arm of which said last named flexible member is connected, a cable connected to the other arm of said bell crank lever, a plurality of pulleys over which said cable passes, a plurality of shafts by which

the pulleys are carried, a weighted member connected to the other end of said cable, a plurality of gear wheels carried by said shafts and intermeshing with each other, a continuously rotating shaft, and connections between said continuously rotating shaft and one of the first named shafts for changing intermittent rotary movement of said first named shaft into continuous rotary movement of the continuously rotating shaft.

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

DAISY M. BARTEAU.

Witnesses:
J. C. HIZAR,
MARGUERITA M. ROCHE.