Dec. 29, 1925. 1,567,470

T. H. SETTLE

WAVE MOTOR

Filed Jan. 30, 1922

Fig. 1.

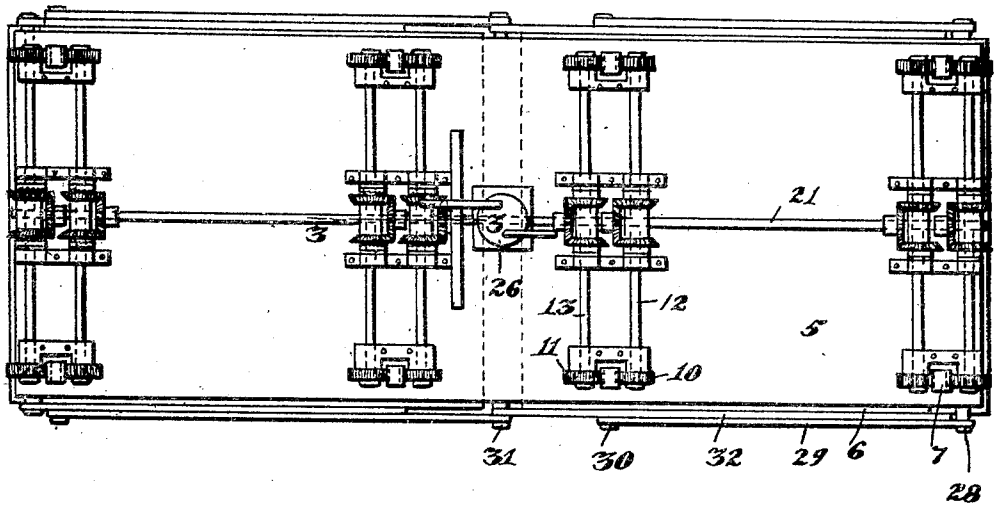


Fig. 2.

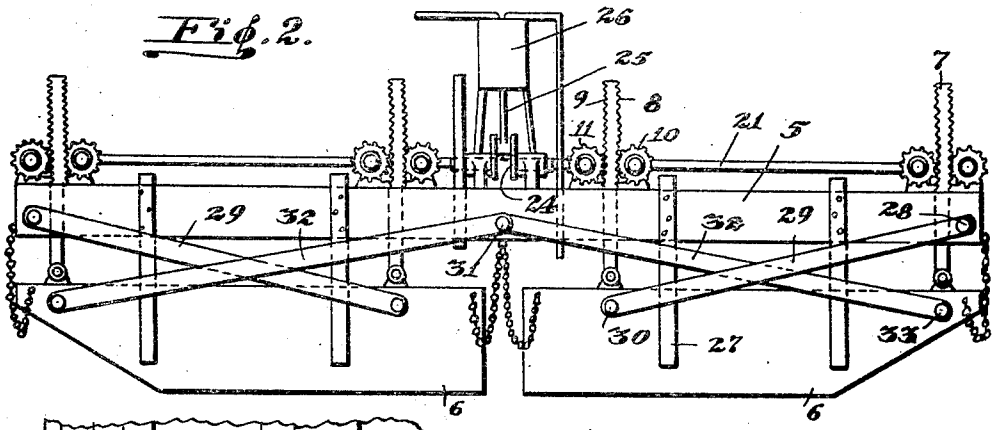
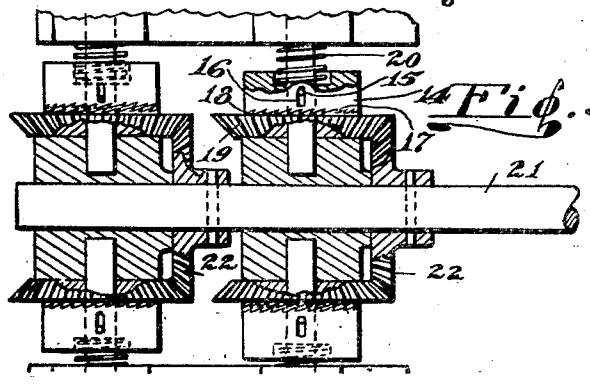


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS H. SETTLE, OF SAN FERNANDO, CALIFORNIA.

WAVE MOTOR.

Application filed January 30, 1922. Serial No. 532,882.

To all whom it may concern:

Be it known that I, THOMAS H. SETTLE, a citizen of the United States, residing at San Fernando, in the county of Los Angeles and State of California, have invented new and useful Improvements in Wave Motors, of which the following is a specification.

My invention relates to a device for generating mechanical power by the surface motion of bodies of water, such as by the motion of waves, swells and the like, and an object of my invention is to provide a means whereby an undulating motion such as is imparted to a buoyant structure supported on the surface of the ocean or other large body of water, may be converted into a mechanical motion and utilized as a source of power.

Another object is to provide a buoyant structure comprising a plurality of floats so connected together as to be capable of articulate movement relative to each other, and also to provide means whereby the motion of the floats in respect to each other may be employed in the propulsion of power transmission machinery.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear my invention resides in the parts and in the construction, arrangement and combination of parts as hereinafter specified and claimed and illustrated in the accompanying drawings, in which;

Figure 1 is a plan view of the device;

Fig. 2 is a view in side elevation;

Fig. 3 is a detail in horizontal section of the mechanism for converting a reciprocal rotary motion into a continuous rotary motion, as seen at right angles to the plane of line 3—3 of Fig 1.

Referring to the drawing more specifically 5 indicates a platform or deck which is carried on a plurality of floats or barges 6 arranged end to end and attached to the platform in such manner as to have vertical movement relative thereto and also to have movement independent of each other. The connection between the platform and floats comprises a series of upwardly extending bars 7 pivoted at their lower ends to the floats, which bars are formed with rows of rack teeth 8 and 9 on their opposite sides facing the direction of pivotal movement of the bars and which pivotal movement is in the direction of the length of the platform and floats. Meshing with the rack teeth are pinions 10 and 11 on shafts 12 and 13. A bar 7 is located at each of the corners of a square on each float so as to provide a pair of the bars adjacent each end of the float with a bar disposed near each side thereof, and a pair of the parallel shafts 12 and 13 lead toward the longitudinal center of the platform from each toothed bar. The inner ends of each shaft 12 and 13 is fitted with a loose sleeve 14, a pin 15 on the shaft projecting into a longitudinal slot 16 on the sleeve whereby the sleeve may rotate with the shaft and at the same time have longitudinal movement relative thereto. The outer end of the sleeve is formed with ratchet teeth 17 which normally engage corresponding teeth 18 on an idler beveled gear 19; a spring 20 being arranged to act on the sleeve to press it against the gear. Extending longitudinally of the platform is a shaft 21 fitted with beveled gears 22 which mesh with the gears 19 at the ends of the shafts 12 and 13. The shaft 21 is here shown as provided with a crank 24 connected to a pitman rod 25 of a pump or compressor 26.

Vertical guide rails 27 project downwardly from the sides of the platform along the sides of the floats to hold the latter in longitudinal alignment with the platform.

Pivoted at 28 adjacent each end of the platform is a link 29 which extends downwardly and is pivotally connected at 30 adjacent the inner end of the float, and pivoted at 31 at the center of the platform is a pair of links 32 which extend downwardly and are pivoted at 33 adjacent the outer ends of the floats. A corresponding set of the links is provided on each side of the device.

In the operation of the invention the platform is moored in any suitable manner so that the floats may have vertical movement relative thereto and positioned with the floats extending longitudinally in the general direction of flow of waves or swells in such manner that as waves and swells pass lengthwise beneath the floats the latter will be caused to have a rocking or undulating movement relative to the platform and to each other thereby imparting a reciprocal movement to the toothed bars which in turn will impart a reciprocal rotary motion to the shafts 12 and 13. The motion of the shafts 12 and 13 will be converted into continuous rotary motion by the action of the ratchet

toothed sleeves and the gears 19 and 22 as is common in transmission mechanism of this character.

I claim:

1. In a wave motor, a platform, a plurality of floats arranged end to end beneath said platform, crossed links connecting each float to the platform limiting longitudinal movement of the floats relative to the platform, toothed bars pivoted to the floats extending upwardly and adapted to reciprocate on vertical movement of the floats relative to the platform, and means for transmitting the movement of the bars.

2. A wave motor comprising a platform, a float, a pair of crossed links connecting the float to the platform whereby the float may have undulating movement relative to the platform, means for guiding the float, and transmission mechanism operable by movement of the float relative to the platform.

3. In a wave motor, a platform, a float, a pair of crossed links having their upper end portions pivotally connected to the platform and having their lower end portions pivotally connected to the float adjacent the ends of the latter, whereby the float may have an undulating movement relative to the platform, means for guiding the float, and transmission mechanism operable by vertical movement of the end portions of the float relative to the platform.

THOMAS H. SETTLE.