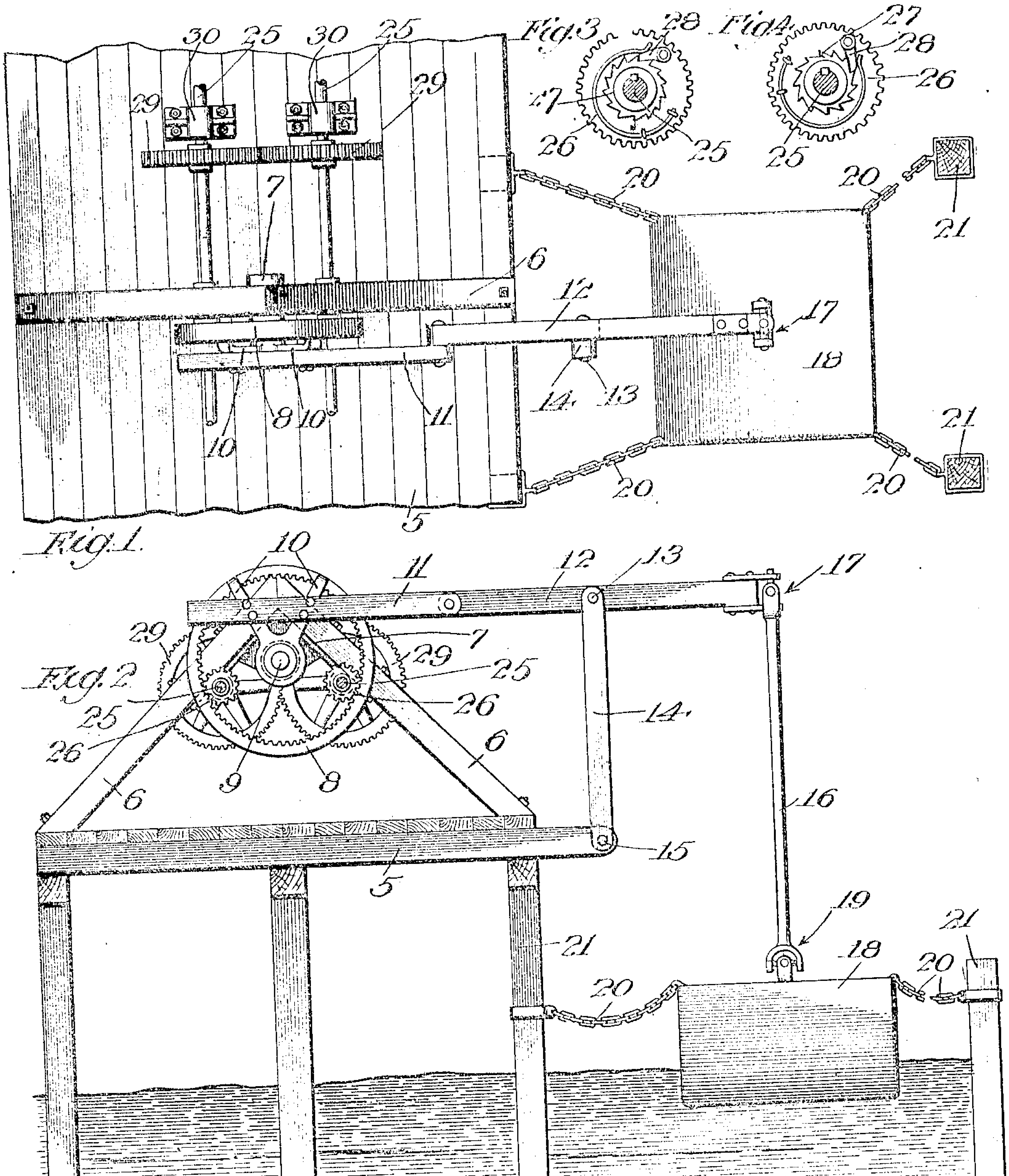
No. 892,567. PATENTED JULY 7, 1908.

B. C. & J. J. THRASHER & W. S. SMALLWOOD.

WAVE MOTOR.

APPLICATION FILED AUG. 15, 1907.



Witnesses:

[illegible]

[illegible]

Inventors:
Benton C. Thrasher,
Josiah J. Thrasher
and William S. Smallwood,

By Hazard & [illegible] Attorneys.

UNITED STATES PATENT OFFICE.

BENTON C. THRASHER, OF BURBANK; JOSIAH J. THRASHER, OF LANKERSHIM, AND WILLIAM S. SMALLWOOD, OF SHORB, CALIFORNIA.

WAVE-MOTOR.

No. 892,567. Specification of Letters Patent. Patented July 7, 1908.

Application filed August 15, 1907. Serial No. 388,649.

To all whom it may concern:

Be it known that we, BENTON C. THRASHER, residing at Burbank, in the county of Los Angeles, State of California, JOSIAH J. THRASHER, residing at Lankershim, county of Los Angeles, State of California, and WILLIAM S. SMALLWOOD, residing at Shorb, county of Los Angeles, State of California, all citizens of the United States, have invented new and useful Improvements in Wave-Motors, of which the following is a specification.

The object of our invention is to provide a wave motor which is at once simple in construction and efficient in operation and which will transform the intermittent motions of a barge riding upon the surface of the ocean into a regular rotary motion which may be used for power purposes in any well known manner. We accomplish these objects by means of the device described herein and illustrated in the accompanying drawings in which:—

Figure 1,—is a plan view of our improved wave motor. Fig. 2,— is an end elevation of the same. Figs. 3 and 4,— are elevations of the two pinions and ratchets therefor mounted on the main shafts.

In the drawings 5 designates a pier or other suitable support on which a frame 6 is mounted and which is adapted to carry the mechanism of our motor. Rigidly secured to frame 6 is a bearing frame 7 on which a thr e gear wheel 8 is rotatively mounted as at 9. To the two spokes 10 of gear wheel 8 is secured a beam 11 and by means of which the gear wheel may be rotated on its pivot. To the outer end of beam 11 is pivotally secured an operating lever 12 which is pivoted near the center at 13 on a pivoted upright 14 secured at 15 to a timber of the pier. To the outer end of lever 12 is secured a vertical rod 16 by means of a swivel joint 17. Vertical rod 16 is connected to barge 18 by means of a second swivel joint 19 so that the barge may move about on the surface of the water without injuring the connection to the mechanism. Barge 18 is anchored by means of chains 20 to piers 21 so that it may have a limited freedom of movement and thus by its flexibility obviate all danger of destruction by storms or other violence.

In bearing frame 7 are also rotatively mounted two longitudinal shafts 25, which carry pinions 26 loosely mounted thereon and connected therewith through the medium of ratchet wheels 27 keyed to the shafts and dogs 28 mounted upon pinions 26. It will be observed from Figs. 3 and 4 that ratchets 27 are so arranged that the pinions can only drive the respective shafts in opposite directions. As the shafts rotate in opposite directions they are connected together by means of large gears 29 mounted thereon adjacent supporting bearing 30. It will be manifest that the motion imparted to shafts 25 is continuous as one pinion will rotate the shafts upon the upward movement of the barge while the other pinion will rotate the shafts on the downward movement of the barge. One of the shafts may be extended towards the shore and power taken therefrom in any well known manner. Any number of units such as above described may be mounted on shafts 25 which may be extended in either direction for that purpose.

It will be observed that we have provided a wave motor which will transform the intermittent motions of a barge floating upon the sea waves into a continuous rotary motion which is capable of utilization for power purposes. It will further be observed that we have provided a motor which on account of its simplicity and flexibility of construction will withstad the elements without being injured thereby.

Having described our invention what we claim as new and desire to secure by Letters Patent is:—

1. In a wave motor a pier, a revoluble gear mounted upon said pier, a beam secured to said gear and extending outwardly therefrom, a floating barge, flexible connecting means between the outer end of said beam and said barge, a plurality of shafts rotatively mounted on said pier, pinions loosely mounted on said shafts and adapted to mesh with said gear, and ratchet connections between said pinions and said shafts.

2. In a wave motor a pier, a revoluble gear mounted on said pier, said gear being provided with a beam extending outwardly therefrom, a pivoted lever mounted on said pier whose inner end is connected with the outer end of said beam, a floating barge, a universal connection between said barge and the outer end of said lever, a pair of shafts rotatively mounted on said pier, pinions on said shafts adapted to mesh with said gear,

ratchet connections between said pinions and said shafts, said ratchet connections being so disposed as to rotate said shafts in opposite directions, and gears on said shafts adapted to mesh with each other.

3. In a wave motor a pier, a revoluble gear mounted upon said pier, a beam secured to said gear and extending outwardly thereupon, a lever pivoted on said pier, whose inner end is pivotally connected with the outer end of said beam, a floating barge, and a universal connection between said barge and the outer end of said lever.

In witness that we claim the foregoing we have hereunto subscribed our names this 8th day of August, 1907.

BENTON C. THRASHER.
JOSIAH J. THRASHER.
WILLIAM S. SMALLWOOD.

Witnesses:
EDMUND A. STRAUSE,
OLLIE PALMER.