

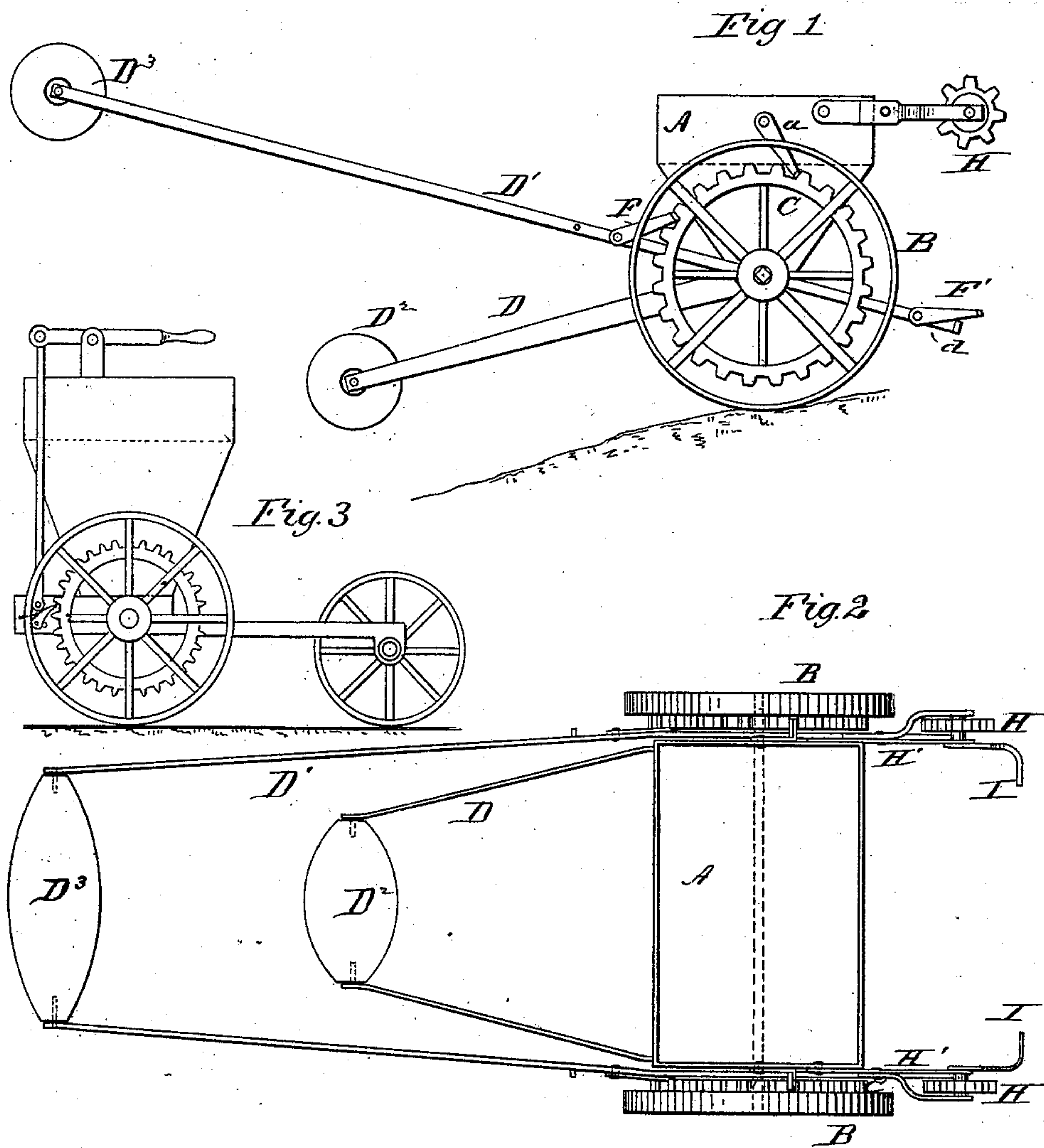
(No Model.)

2 Sheets—Sheet 1.

E. B. LAKE.
LIFE SAVING VEHICLE.

No. 299,808.

Patented June 3, 1884.



Witnesses

A. A. Connolly
J. B. Connolly

Ezra B. Lake

Inventor

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(No Model.)

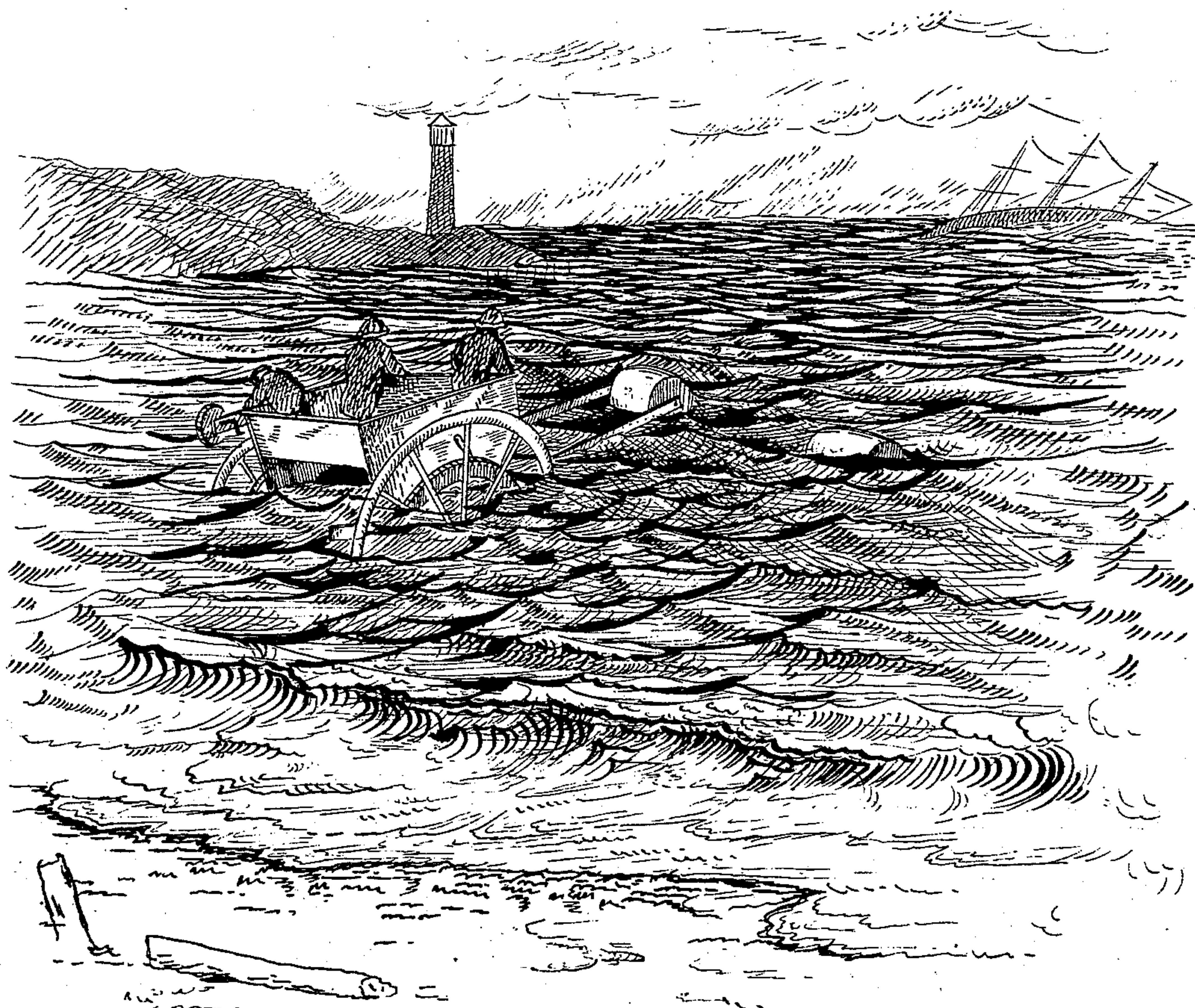
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Fig 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

EZRA B. LAKE, OF OCEAN CITY, NEW JERSEY.

LIFE-SAVING VEHICLE.

SPECIFICATION forming part of Letters Patent No. 299,808, dated June 3, 1884.

Application filed February 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, EZRA B. LAKE, a citizen of the United States, residing at Ocean City, in the county of Cape May and State of New Jersey, have invented certain new and useful Improvements in Life-Saving Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation of an apparatus embodying my invention. Fig. 2 is a plan view. Fig. 3 is a side elevation of a modification, and Fig. 4 is a perspective representation of the apparatus in use.

The object of this invention is to provide a novel and efficient life-saving apparatus for marine coast service, especially adapted for use in situations and under circumstances in which the life-saving expedients now in use are unserviceable and inapplicable.

The methods now in use on dangerous coasts having extensive shoals or bars to reach vessels in distress involve the employment of what is known as the "life-line." When a wrecked vessel is near enough to the shore to render the life-line available, such line is thrown over the wreck from the shore by the use of a mortar, to the shot from which the line is attached. After this line has been fixed to the vessel, another line or bridge is arranged, and the persons on board the vessel are brought to the shore in conveyances adapted to travel on said bridge. The use of this method is limited, and in many instances altogether unserviceable, for the reason that the life-line can only be thrown to vessels very near the shore. The use of boats in these instances is frequently impossible, as the vessel is usually wrecked in heavy or stormy weather, when the sea is so high or the breakers of such magnitude that a small boat cannot live in them.

My invention contemplates the use of an apparatus which may be brought into requisition under the most violent conditions of weather, and which may be made to reach vessels lying altogether beyond the reach of life-lines.

My invention consists in the provision of what may be termed a "marine carriage," the same being a rolling vehicle mounted on

wheels and furnished with propelling devices, which are actuated by the waves, and which cause the wheels to travel in any desired direction upon the shoal bottom or bar.

My invention, furthermore and incidentally, consists in the combination, with the marine carriage, of means whereby the same may be propelled upon the shore or in the water when the action of the waves is insufficient to effect propulsion.

Referring to the accompanying drawings, which illustrate a simple construction embodying my invention, A designates the body of the carriage or vehicle, consisting of a box or boat-shaped compartment, made of sheet metal, wood, or other suitable material, and preferably of skeleton or open work, in order to offer but little resistance to the sea or waves. The box A is mounted on large wheels B, which are independently journaled, so that they may turn in the same or opposite directions. For the purposes of my invention these wheels may be toothed on their peripheries for the engagement of the propelling-dogs; or separate toothed wheels C may be employed, as shown in the drawings. In the latter case the plain wheel and the adjacent toothed wheel are conveniently secured to the one hub, so as to turn together. The wheels B B are adapted to travel upon the surface of the bar or shoal, and are placed sufficiently far apart to enable the vehicle to accommodate itself to inequalities in the bar or shoal without danger of tilting or upsetting.

D D' designate the propelling-levers, consisting of the thill or shaft like frames of unequal lengths. The frame-levers D are secured at their inner ends to the depending sides of the box A, and support at and between their outer ends a large float, D². The levers D' are mounted loosely on the axle E, outside the arms or levers D, and, extending beyond the outer extremity of the latter, support a similar float, D³. The levers D' also extend lengthwise on the opposite side of the axle, as shown at d. The arrangement of the lever-frames is such that their outer and float-carrying ends will alternately rise and fall with the action of the waves, the float on one frame being in the trough of the sea while the other float is on the crest of the wave.

F F' designate pawls or dogs pivoted to each

of the levers D' on opposite sides, respectively, of the toothed propelling-wheels, and adapted to engage with the teeth thereof, so as to turn the wheel a short distance with each movement of the lever. Only one of said pawls or dogs on each lever is in use at one time, the other being thrown out of engagement. As shown in Fig. 1 the pawl F is being utilized; hence the vehicle is under propulsion in a backward direction. As the levers D' fall the pawl rides over several teeth of the wheel, and upon their rise takes hold of a tooth and turns the wheel until the float D' reaches its highest limit. The float D² then falls, while the float D rises, causing the pawls *a*, which are pivoted to the sides of the carriage, to engage with the toothed wheels and turn the same while the float D³ is rising. The alternating movement of the float and lever-arms thus produces a continuous movement of the vehicle. To reverse the movement of the vehicle, the pawls or dogs F' are thrown into engagement with the toothed wheels, while the pawls F are disengaged therefrom. At the same time the position of the pawls *a* is reversed, it being necessary that the point of the pawl *a* should be on the opposite side of the axle from the pawl on the lever. Should it become necessary to turn the wheels in opposite directions for the purpose of guiding the vehicle in an irregular line, the pawls on either side may be placed in different positions.

H designates pinions mounted on pivotal frame or standard H', attached to the sides of the body A, and I designates cranks fitted to the shafts of said pinions for the purpose of turning the same. By adjusting the pivotal frame or standard the pinion may be brought into engagement with one or both of the toothed wheels, so that by turning the crank the vehicle may be propelled by hand. By the addition of an idler or intermediate gear-wheel the power may be applied to the propelling-wheels by persons in the body of the vehicle. In some cases it may be desirable and expedient to dispense with the floats, and to construct the vehicle so that it may be propelled independently of the action of the waves.

In Fig. 3 I have shown a marine wagon supported on three wheels; but any number may

be used; and in this case, as well as cases where the floats are used, the hand-propelling devices may consist of levers arranged on the body and connected by rods with levers on the axle, to which are attached pawls engaging with the toothed wheels. By raising and lowering the levers on the body the pawl alternately takes hold and releases the toothed wheels, and so effects an intermittent rotation of the same.

What I claim as my invention is as follows:

1. A life-saving vehicle consisting of a body or frame provided with wheels, and having buoyant or floating levers, which turn said wheels through the action of the waves and cause the vehicle to move, substantially as set forth.

2. The combination of the body A, mounted on wheels B B, with mechanism, operated by the action of the waves on suitable floating buoys, whereby said wheels are turned and the vessel propelled through the action of the waves.

3. The combination of the body A, mounted on wheels B B, to which are connected the toothed wheels C, with the floating or buoyant levers D D', carrying pawls which engage with the toothed wheels and effect the propulsion of the vehicle, as described.

4. The combination, with the body A, provided with toothed propelling-wheels and devices for turning the same through the action of the waves, of an adjustable pinion adapted to engage the toothed propelling-wheels, and provided with means of operation, substantially as described.

5. The combination, with a marine wagon adapted to run or travel on the bar or shoal bottom, and provided with toothed propelling-wheels, and floating or buoyant levers for moving said wheels through the action of the waves, of mechanism, substantially as set forth, whereby said vehicle may be operated from the body of the wagon or by hand, as described.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of February, 1884.

EZRA B. LAKE.

Witnesses:

THOS. A. CONNOLLY,
WILL H. POWELL.