

J. E. ERIKSON.
MOTOR BOAT ATTACHMENT.
APPLICATION FILED MAY 16, 1911.

1,002,661.

Patented Sept. 5, 1911.

3 SHEETS—SHEET 1.

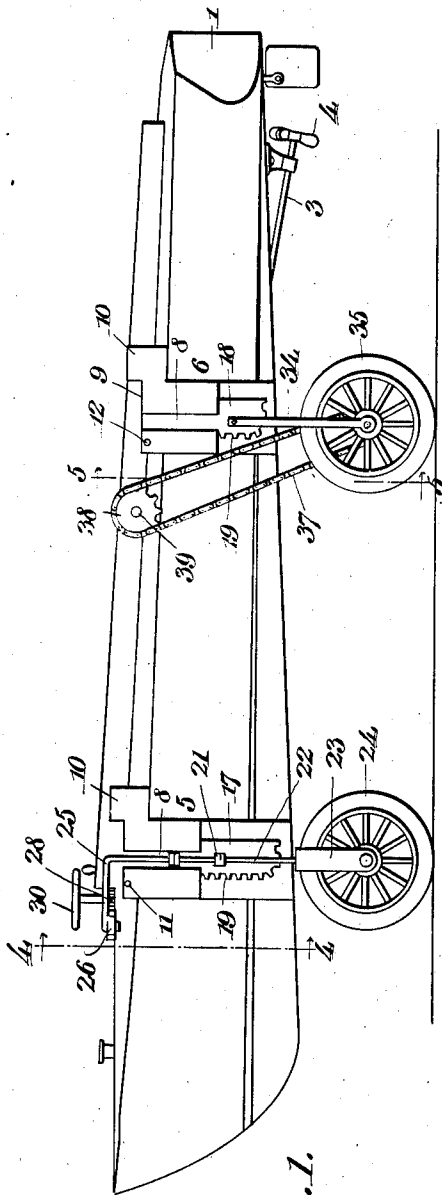


Fig. 1.

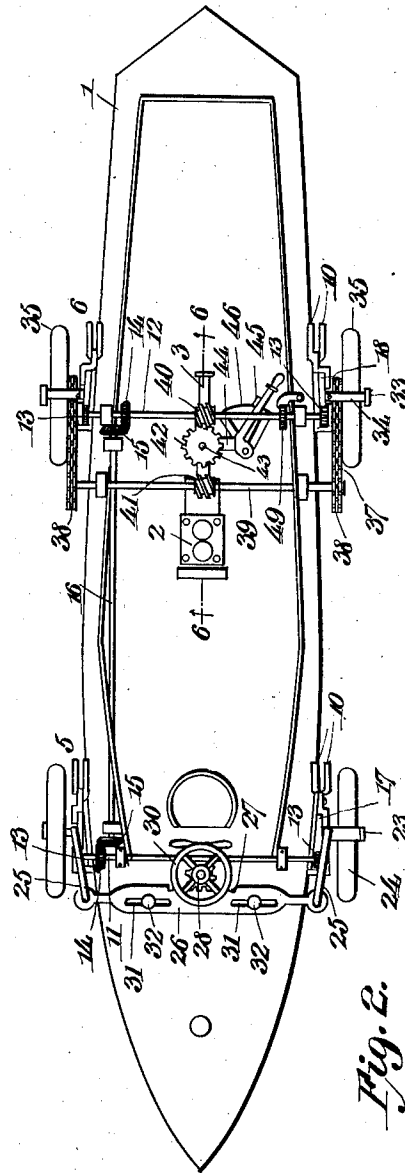


Fig. 2.

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3 SHEETS—SHEET 2.

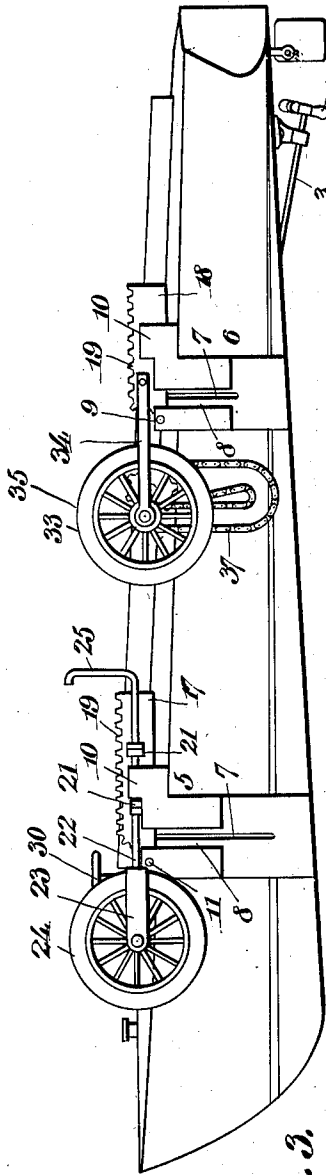


Fig. 3.

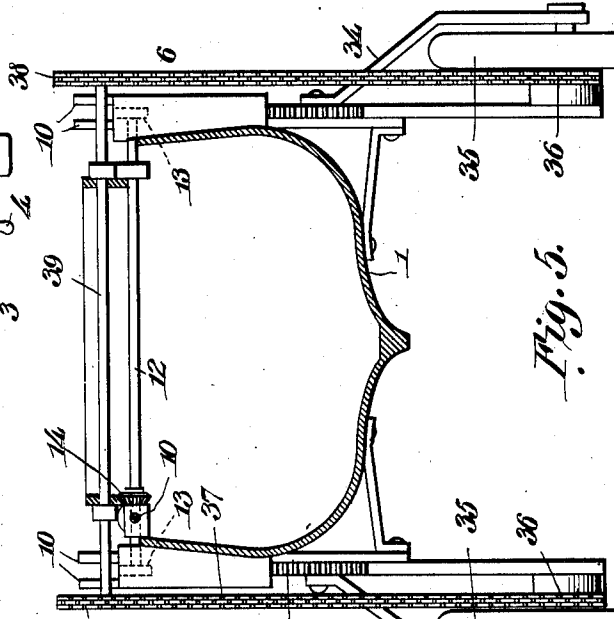


Fig. 5.

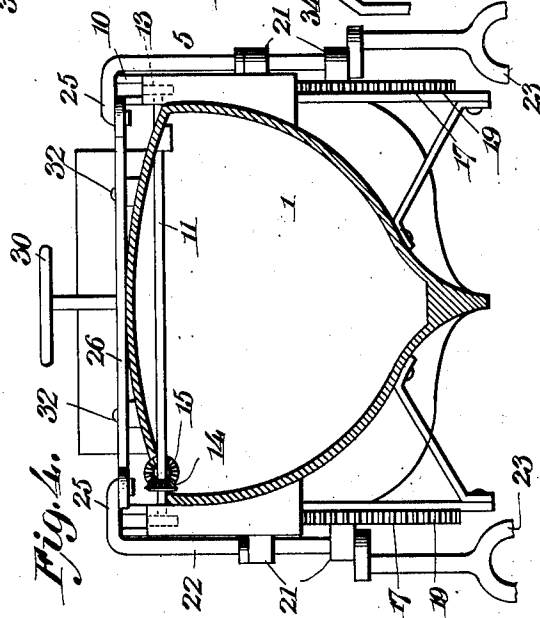


Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 6.

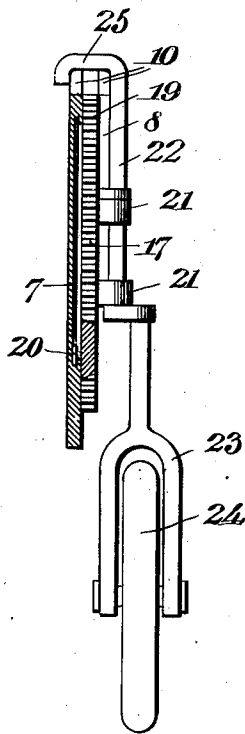
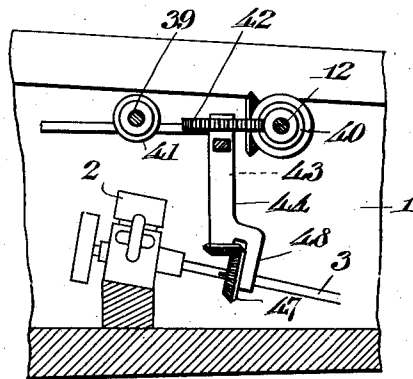


Fig. 8.

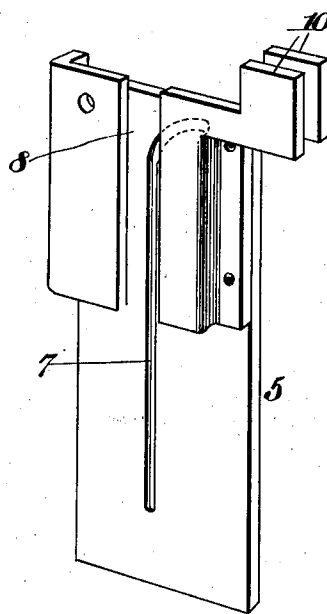


Fig. 7.

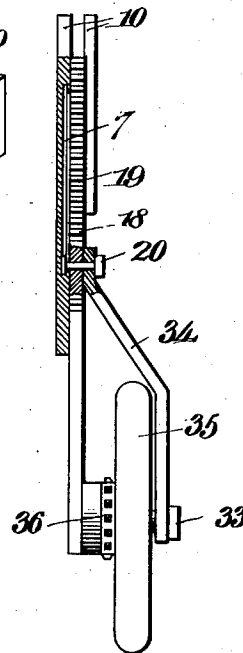


Fig. 9.

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UNITED STATES PATENT OFFICE.

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MOTOR-BOAT ATTACHMENT.

1,002,661.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed May 18, 1911. Serial No. 627,428.

To all whom it may concern:

Be it known that I, JOHN E. ERIKSON, a citizen of the United States, residing at Pequot, in the county of Crow Wing and State of Minnesota, have invented new and useful Improvements in Motor-Boat Attachments, of which the following is a specification.

This invention relates to land and water vehicles, and particularly to an attachment for motor boats to adapt the same for land travel, the object of the invention being to provide means which may be applied to any ordinary type of motor boat whereby the same may be converted at any time into a land vehicle.

The invention consists of the features of construction, combination and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of a motor boat embodying my invention, showing the land wheels lowered for use. Fig. 2 is a top plan view of the same. Fig. 3 is a view similar to Fig. 1, showing the land wheels elevated to an inoperative position. Fig. 4 is a vertical transverse section on line 4—4 of Fig. 1. Fig. 5 is a similar section on line 5—5 of Fig. 1. Fig. 6 is a detail section on line 6—6 of Fig. 2. Fig. 7 is a perspective view of one of the supporting brackets. Fig. 8 is a sectional end elevation of one of the front wheels and its carrier. Fig. 9 is a similar view of one of the rear wheels and its carrier.

Referring to the drawings, the numeral 1 designates the body or hull, 2 the motor, 3 the propeller shaft, and 4 the propeller of a motor boat of any suitable type.

Secured to the sides of the hull 1, adjacent to the bow and stern thereof, respectively, are brackets 5 and 6, which are generally similar in construction, each comprising a plate bolted or otherwise fastened in position and provided upon the front thereof with a guideway 7. Each bracket is further provided with a vertical guide groove 8 terminating at its upper end in a horizontal portion 9, and with a retainer 10 composed of space plates arranged adjacent to said horizontal portion of the guide groove.

Journalled in the bracket plates and extending across the top of the hull are front and rear transverse shafts 11 and 12 carrying at their ends pinions 13 which project

partially into the guideways 7, as shown. These shafts carry bevel gears 14 meshing with bevel gears 15 on a longitudinal transmission shaft 16, whereby said shafts are adapted to rotate in unison to transmit motion to all the gear pinions simultaneously. Slidably supported by the respective brackets are carriers 17 and 18, each comprising an oblong rectangular plate provided along its front edge and lower rearwardly curved edge with a series of gear teeth 19, the gear teeth of the respective carriers meshing with the pinions 13 on the transverse shafts 11 and 12. Each carrier is provided with a T-shaped guide pin or bolt 20 at or near its lower end, which guide pin or bolt travels in the coacting guide groove 8, whereby the carrier is adapted on its up and down movements to follow the course of said groove.

From the foregoing construction, it will be apparent that the carriers are adapted to be adjusted vertically upon the brackets or supports through the rack and pinion mechanism, and through the lateral curvature of the upper ends of the grooves and the action of the pinions on the curved lower ends of the carriers are adapted at the limit of their upward movement to swing rearwardly into engagement with the retainers 10.

The front carrier plates are formed with bearing sleeves 21 in which are journaled spindles or stems 22 having forked lower ends 23 in which are journaled front supporting and steering wheels 24, which are preferably provided with pneumatic tires. The upper ends of said spindles or stems are angularly bent to form cranks 25 which pivotally engage the opposite ends of a transversely disposed steering bar 26. This bar is provided at its rear edge with rack teeth 27 engaged by a pinion 28 on a shaft 29 carrying a steering wheel 30, the construction being such that upon turning the steering wheel in one direction or the other, the steering bar will be laterally shifted in one direction or the other to transmit motion to the cranks 25, whereby the supporting and steering wheels 24 may be turned to the right or left to steer the vehicle. Slots 31 are formed in the bar and receive pins or studs 32 on the body of the boat, whereby the bar is supported and guided in a straight path and its motion in either direction limited.

Each rear carrier plate supports an axle

pin or bolt 33 fixed at one end therein and at its opposite end in the lower end of a curved brace 34 secured at its upper end to said plate. Journaled on said axle is a rear supporting and drive wheel 35 preferably provided with a pneumatic tire and arranged between the plate and brace. The hub of said wheel has secured thereto a sprocket wheel 36 connected by a chain 37 with a sprocket drive wheel or pinion 38 on the adjacent end of a transverse shaft 39. The shaft 39 extends across the hull of the boat and is journaled in the upper ends of the brackets or supports 5 and 6 and is adapted to receive driving energy from the motor to transmit motion to the wheels 35 for propelling the vehicle on land.

Mounted on the shafts 12 and 39, which are arranged in parallel relation and in proximity to each other, are gears 40 and 41 adapted to be engaged by a pinion or gear 42 on the upper end of a vertical transmission shaft 43. This shaft 43 is carried by a sliding bracket 44, in which it is journaled, which bracket is adjustable between the two gears 40 and 41 by means of a lever 44 provided with a pawl 45 adapted to engage the rack 46 to secure said bracket in adjusted position. The lower end of the shaft 43 is in gear with the propeller shaft through the medium of a gear 47 feathered to slide upon and rotate with said propeller shaft and engaged by the forked lower end 48 of the bracket 44, whereby it is adapted to be shifted with said bracket. By this construction power may be transmitted from the propeller shaft to drive either shaft 12 or 39, either one of which shafts may be driven in a forward direction when the propeller drive gearing is in normal position or in a rearward direction by reversing the drive gearing or the motor. When the gear 42 is in mesh with the gear 40 the shaft 12 will be operated, according to the direction of motion imparted thereto, to transmit motion to the rack and pinion mechanism to either adjust or move all of the carriers or wheels downwardly or to adjust or move all of said carriers and wheels upwardly, whereby the wheels may be projected for use or retracted to a substantially horizontal position when their use for land propulsion is not desired. In the latter named position it will be apparent that the wheels and carriers will be out of the way of the occupants of the boat and will not interfere with the propulsion of the boat through the water. When the gear 42 is shifted into engagement with the gear 41 motion will be transmitted through the shaft 39 and sprocket gearing to drive the rear supporting wheels for the propulsion of the vehicle on land, as will be readily understood. Pawl and ratchet mechanism 49, or locking means of any equivalent character, may be provided for holding the

shaft 12 against retrograde rotation in any of its positions of adjustment, so that the carriers and supporting wheels will be held securely in the positions they occupy.

From the foregoing description, taken in connection with the drawings, the construction and mode of use of my attachment for motor boats will be readily understood, and it will be seen that the invention provides a traction attachment which is applicable to any ordinary type of motor boat for converting the same into a land vehicle, which attachment may be readily and conveniently thrown into and out of use as occasion requires.

Having thus described the invention, what I claim is:

1. A vehicle of the character described embodying a hull, a motor, front and rear sets of supporting wheels mounted upon the hull for adjustment from an operative to an inoperative position, and vice versa, gearing rack and pinion devices for raising and lowering the sets of wheels simultaneously, gearing for driving one of said sets of wheels, and means for driving either of said sets of gearing from the motor.

2. A vehicle of the character described embodying a hull, front and rear sets of supporting wheels, rack-toothed brackets carrying said wheels and mounted upon the hull for vertical adjustment from an operative to an inoperative position, and vice versa, shafts carrying pinions meshing with the rack-toothed brackets, steering mechanism connected with the front wheels, means for actuating the pinion-carrying shafts for raising and lowering the sets of wheels simultaneously, and means for driving the wheels from the drive gearing.

3. A vehicle of the character described comprising a hull, supporting brackets at the sides of the hull and adjacent the bow and stern thereof, carriers adjustably mounted upon the brackets for downward movement to a substantially vertical position and upward movement to a substantially horizontal position, front supporting wheels pivotally mounted upon the front carriers, rear supporting wheels journaled upon the rear carriers, steering mechanism connected with the front supporting wheels, means for raising and lowering the sets of supporting wheels simultaneously, drive gearing upon the hull of the vehicle, and means for driving the rear supporting wheels from said drive gearing.

4. A vehicle of the character described comprising a hull, supporting brackets at the sides of the hull adjacent the bow and stern thereof, carriers adjustably mounted upon the brackets for downward movement to a substantially vertical position and upward movement to a substantially horizontal position, forks journaled on the front car-

riers and carrying supporting wheels and provided with cranks, rear supporting wheels journaled upon the rear carrier, a steering bar engaging said cranks, means for
5 operating said steering bar, means for raising and lowering the sets of supporting wheels simultaneously, and gearing operated by the drive gearing for driving the rear supporting wheels.
10 5. A vehicle of the character described comprising a hull, carriers adjustably mounted at the sides of the hull adjacent the bow and stern thereof, means including rack and pinion gearing for adjusting said carriers up or down simultaneously, supporting
15 and steering wheels mounted upon the front carriers, means for turning said steering wheels, supporting and driving wheels

mounted upon the rear carriers, drive gearing supported by the hull, and gearing operated thereby for driving said rear wheels. 20

6. A vehicle of the character described embodying a hull, front and rear sets of vertically adjustable wheels, steering mechanism connected with the front wheels, a motor, gearing for raising and lowering the
25 wheels, gearing for driving said wheels, and means for throwing either of said sets of gearing into and out of connection with the motor. 30

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

JOHN E. ERIKSON.

Witnesses:

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C. W. WOODWORTH.