

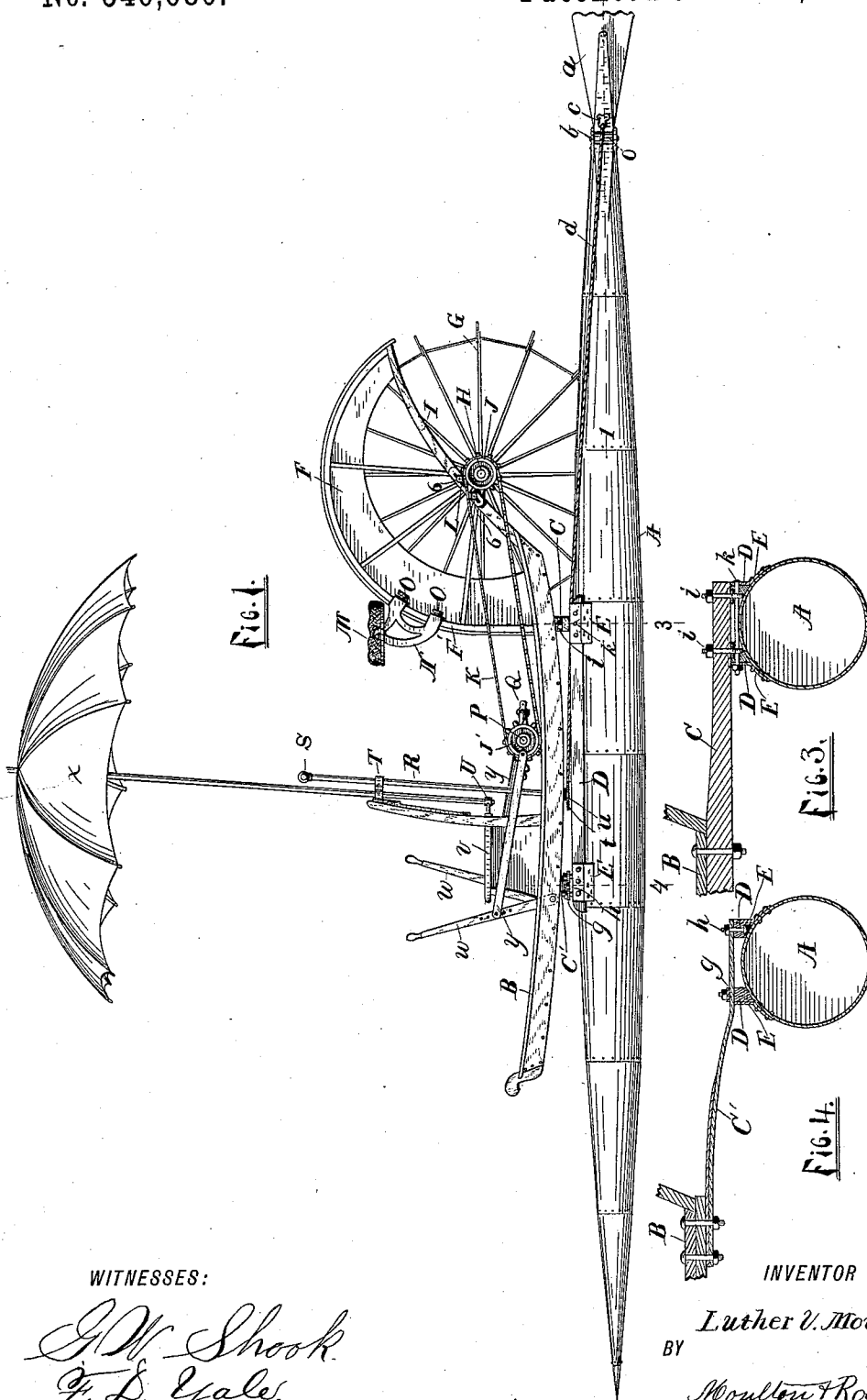
(No Model.)

2 Sheets—Sheet 1.

L. V. MOULTON.
MARINE VELOCIPEDE.

No. 540,680.

Patented June 11, 1895.



WITNESSES:

G. W. Shook
F. D. Gale

INVENTOR

BY *Luther V. Moulton.*

Moulton & Rogers.
ATTORNEYS.

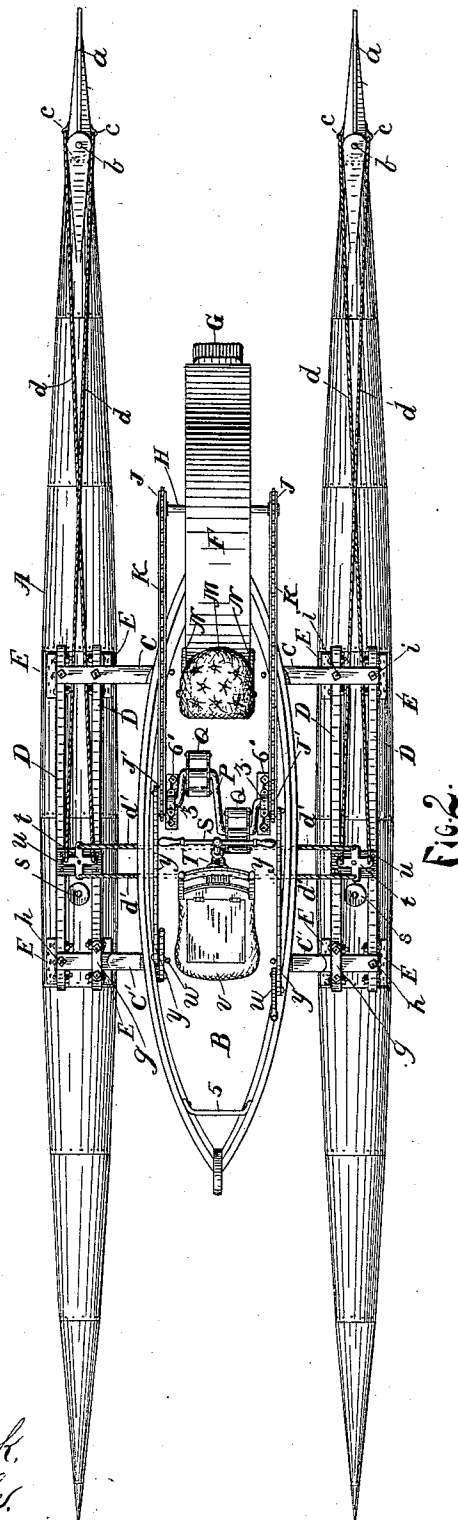
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UNITED STATES PATENT OFFICE.

LUTHER V. MOULTON, OF GRAND RAPIDS, MICHIGAN.

MARINE VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 540,680, dated June 11, 1895.

Application filed November 11, 1889. Serial No. 329,969. (No model.)

To all whom it may concern:

Be it known that I, LUTHER V. MOULTON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Marine Velocipedes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in marine velocipedes, and its object is to provide the same with certain new and useful features hereinafter fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view showing the manner of attaching the connecting-beam to the floats; Fig. 4, the same of the forward connecting-springs.

Like letters and numerals refer to like parts in all of the figures.

A A represent two substantially cigar-shaped floats, arranged a suitable distance apart and parallel with each other, and preferably made of galvanized iron riveted and soldered, which floats constitute the boat proper. These floats support a body B having any convenient shape; that shown being of a small flat bottomed skiff. This body B is supported above the water and between the floats A A, and connected to the same by flexible bearings, consisting of the beam C and springs C', which beam and springs are secured to said body by suitable bolts or other fastenings; and at their outer ends to parallel sills D, which sills are secured to the floats A A by angle plates, E. The beam C is pivoted to said sills by eye bolts *i i* and the bolts *k*, the latter passing through said eye bolts and sills, as shown; or said beams may be rigidly secured to the sills by bolts, or otherwise, and provided with sufficient torsional flexibility to permit the desired movement of the floats in a sea-way; or spring bearings may be used all around, but I prefer the construction shown. The springs C' are secured to the

outer sills by bolts *h*, and to the inner sills by clips *g*.

F is a suitable wheel-house at the rear of the body B, having forward and upper curved bars F' and rear inclined bars I. The paddle wheel G rotates within the wheel-house and is mounted on a shaft H which rotates in bearings L secured to the bars I by bolts 6—6 passing through elongated openings in said bearings, whereby the latter are longitudinally adjustable on said bars to adjust the paddle wheel relative to the water. Said shaft H is provided with sprocket wheels J, which are connected by chains K with similar sprocket wheels J' on the respective ends of a double crank shaft, which is provided with pedals Q and journaled in hangers *z z* adjustably secured to the floor of the body B by bolts 6 passing through elongated openings in said hangers. In the sprocket wheels J' and in the plane of the pedals Q are crank pins, on which are journaled connecting rods *y* which extend diagonally forward and upward at each side of a seat *v* and are pivoted at their forward ends to levers *w w*, which levers are pivoted near the floor of the body B and properly located to be operated by a person upon the seat *v*. One chain K and the connected wheels may be omitted, but I prefer two as shown, thus reducing torsional strains upon the shafts, P and H, and in case one side should be disabled the other will continue to operate.

M is a seat, pivoted to and supported by brackets N adjustably secured to the forward side of the wheel-house, being movably secured to the bars F' by set screws O O.

A rudder of suitable form is pivoted at *b* to the rear end of each float, and said rudders are operated by suitable wires *d* which are attached to eyes *c c* at each side of the rudders and extend forward along the surface of the floats to the transverse arms of the crosses *t*, which crosses are pivoted to plates *u* secured to the sills D. Other cords or wires *d'* extend inward from the longitudinal arms of said crosses, and at their inner ends are attached to the respective arms of a T-head (not shown) on the lower end of a steering post R journaled near its upper end in a bracket T attached to the back of a seat *v* and journaled

near its lower end in the floor of the body B, and also provided with a suitable handle S at the upper end.

A staff to support an umbrella, flag, or sail, passes through an opening in the bracket T and rests at its lower end in a socket U secured to the seat v.

s s are removable caps which close openings through which access may be had to the interior of the floats.

The device shown is adapted to be operated by two persons. One upon the seat v, operates the levers w w by the hands, and the other, upon the seat M, operates the crank shaft P with the feet on the pedals Q and with the hands steers the device by means of the handles S and parts connecting the same with the rudders.

It will be observed that the direction of the thrust on the pedals on the shaft P, by the operator on the rear seat M, is substantially at right angles to the thrust of the connecting rods y, actuated by the operator on the front seat v. This is of great advantage in maintaining a substantially steady action on the connecting chains K and paddle wheel G, as when the crank shaft P is on the quarter and inoperative, the front levers w are at the quarter and fully effective, and vice versa, and as the power of one decreases the other increases, thus effectually avoiding any periodical impulses of power applied to the wheel G, which would cause it to slip when the power is at the maximum and be inefficient at the intermediate dead points.

By utilizing the back of the chair for supporting the steering post and staff, and the front of the wheel-house for supporting the rear seat, I avoid the expense and complications incident to employing special parts for such purposes. By making the floor hangers adjustable I am able to adjust the wheel bearings diagonally along the bar I and thus make the structure simple and effective in adjusting the wheel to the water and in maintaining the chains in proper tension. By providing flexible connections between the floats, each float is permitted to rise and fall independently in the sea-way, and thus enabled to pass through the water more easily and caused to not plunge below the crest of the wave as far as they would if rigidly attached. These are all important advantages possessed by my invention over marine velocipedes heretofore proposed.

I do not claim herein the steering mechanism shown and described as it has been made the subject of a separate application filed by me May 6, 1893, and serially numbered 473,319; but

What I do claim is—

1. The combination of two parallel floats, a body between said floats, having propelling mechanism attached, a beam supporting one end of said body and pivoted to said floats, and springs supporting the other end of said

body and attached to said floats, substantially as described.

2. The combination of two parallel floats, a body between said floats having propelling mechanism attached, a beam supporting the rear end of said body and connecting said floats, and springs connecting said floats to the forward end of said body and supporting the latter, said springs operating to permit independent vertical movement of the forward ends of said floats, substantially as described.

3. In combination, parallel floats, a body between the same having propelling mechanism attached, a beam attached to said body and secured to said floats by inner and outer eyebolts and bolts through the same, and springs attached to said body and secured to said floats by bolts and clips, substantially as described.

4. The combination of two parallel cylindrical floats having sills attached by angle plates, and a body supported upon a beam connecting said floats and pivoted to said sills, and springs attached to said body and to said sills, substantially as described.

5. The combination with a boat having a rear wheel house, and a paddle wheel, mounted on a shaft journaled in said wheel house, a double crank shaft in front of said wheel house, sprocket wheels on the ends of each of said shafts, chains connecting said sprocket wheels, brackets adjustably secured to said wheel house and wholly supported thereby, and a seat pivoted to said brackets, substantially as described.

6. In a propelling mechanism for boats, the combination of a propelling wheel, a double crank shaft connected to said wheel and provided with pedals, pivoted hand levers, and rods connecting said hand levers to said crank shaft and acting upon said shaft at substantially right angles to the action of said pedals, whereby the dead centers of the cranks and the dead centers of the connecting rods are substantially at right angles with each other, substantially as described.

7. The combination with a boat having a rear wheel house, and a paddle wheel mounted on a shaft journaled therein, of a double crank shaft, provided with pedals and located in front of said wheel house, sprocket wheels on the respective ends of said shafts, chains connecting said sprocket wheels, crank pins in the sprocket wheels on the crank shaft, said pins being located in the plane of the cranks, connecting rods extending diagonally forward and upward from said crank pins, and pivoted levers to which said rods are connected, substantially as described.

8. The combination of two parallel cigar-shaped floats, connected by flexible bearings upon which are supported a body having a paddle wheel at the rear, a wheel house over said wheel, a seat attached to the front of said wheel house, a double crank shaft connected

to said wheel by mechanism for transmitting motion, a seat in front of said crank shaft, pivoted levers at each side of said seat, connecting rods pivoted to said levers and crank shaft, a suitable steering post attached to said forward seat, and cords or wires extending from said post to rudders, substantially as described.

9. The combination of a body supported upon parallel floats, a wheel house at the rear of said body, having a paddle wheel journaled in adjustable bearings at its rear end, and an adjustable seat at its front side, a double crank shaft journaled in adjustable bearings on the floor of said body, and pro-

vided with sprocket wheels and chains to transmit motion to said paddle wheel, connecting rods pivoted to said sprocket wheels and to levers pivoted to said body, a seat between said connecting rods, having a back supporting an umbrella, and a rotatable steering post having wires attached, said wires extending to and operating rudders on said floats, substantially as described.

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

LUTHER V. MOULTON.

Witnesses:

DENNIS L. ROGERS,
GEORGE W. SHOOK.