



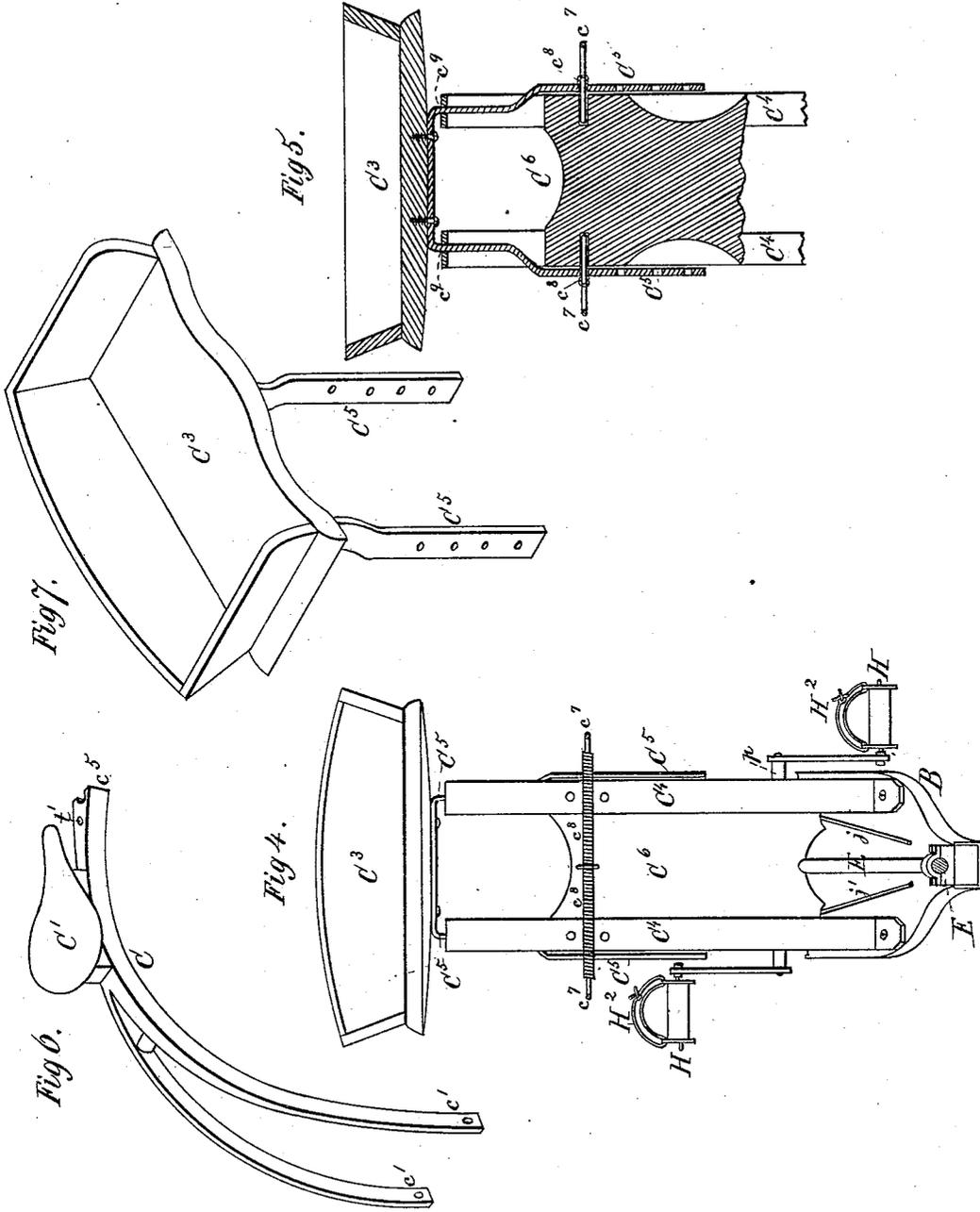
(No Model.)

2 Sheets—Sheet 2.

D. URCH.  
MARINE VELOCIPÈDE.

No. 251,077.

Patented Dec. 20, 1881.



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# UNITED STATES PATENT OFFICE.

DAVID URCH, OF PORTSMOUTH, NEW HAMPSHIRE.

## MARINE VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 251,077, dated December 20, 1881.

Application filed September 9, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID URCH, a citizen of the United States, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented a new and improved boat which I call a "Marine Velocipede or Bicycle," of which the following is a specification.

My invention relates to an improvement in the boat patented to me August 9, 1881; and the nature of my invention consists, first, in making the arched saddle-seat support divisible transversely, so that one half may remain stationary for sustaining the steering-rod and the mast, while the other half may be removed to admit of the use of a buggy-like seat, thus adapting the propeller for seating either one or two persons in such location to the treadles that one foot of two persons or both feet of one person can be employed for operating the mechanism which revolves the propeller; second, a marine-velocipede propeller provided with the divisible arched saddle-like-seat support, and with means for supporting in position a buggy-like seat when the saddle-like seat of the arched support is removed; third, in the marine-velocipede propeller, the converging and bracing beams, in combination with the central rudder, shaft, and rudder, and with the rear cross and uniting bar between the two boats or floats and the bracing of the propeller, whereby the converging ends of the said beams afford a support for the rudder, while the beams and cross-bar and the bracing of the propeller act as rearward diagonal braces or stays against the thrust of the rudder while the boat is being steered.

In the accompanying drawings, Figure 1 is a side view of my aforesaid patented boat, illustrating my invention. In this view the boat is shown as it appears when it is adapted and adjusted for seating a single person. Fig. 2 is a side view of a portion of the boat, showing it as it appears adapted and adjusted for seating two or more persons. Fig. 3 is a plan view of the entire boat adapted, as in Fig. 2, for seating two or more persons. Fig. 4 is a detail transverse section through the propeller-shaft at a point in rear of the mounting-platform, showing the platform provided with the seat adapted for two persons, and also showing the crank-shaft, treadles, and their loops or straps, and also the cords for operating the

rudder. Fig. 5 is a detail vertical section through the support and seat shown in Fig. 4. Fig. 6 is a detail perspective view of the removable portion of the saddle-like seat, and Fig. 7 is a detail perspective view of the buggy-like seat.

A A' are boats or floats, set apart but united by cross-bars  $a a' a^2 a^3$ , and B is the mounting-platform, set inclined upon the bars  $a a'$ . E E' is the propeller-shaft. E<sup>2</sup> is the vertically and laterally bracing device of the propeller and its shaft. It is attached to the cross-bar  $a^3$ , and acts as a brace to said bar when it is strained by the rudder and its bracing; G, the propeller-blades.  $m$  and  $n$  are the gear-wheels for revolving the propeller, one being on the power-shaft  $p$  and the other on the propeller-shaft E E'. R is the rudder; C, the saddle-support, with a saddle-like seat, C', applied to it. H H are the treadles, applied to crank-arms of the revolving shaft  $p$ .

The saddle-support C is made similar in all respects to the one shown in my aforesaid patent, except that it is divided transversely at the point  $c^5$  into two parts, each part forming a quadrant, or nearly so, of a circle. The rear quadrantal portion,  $c'$ , with saddle C' attached to it, is removable, as illustrated in Figs. 2, 3, and 6 of the drawings. This portion  $c'$ , when in position as shown in Fig. 1, has its legs fastened to the edges of the platform B by screw-bolts  $t$ , while its body is provided with bolting-holes  $t'$ . The other portion,  $c^2$ , of the saddle-support has its legs permanently fastened to the platform B, and its body is provided with a bolting clamp-plate,  $c^6$ , which holds the steering-rod  $l$  in position when the portion  $c'$  is removed. The portion  $c'$ , by being fastened to the forward stationary portion,  $c^2$ , of support C by means of screw-bolts passed through the clamping-plate  $c^6$ , which unites the two quadrantal portions at the point  $c^5$ , forms with portion  $c^2$  an arched support, C, similar to that shown in Fig. 1. The support C thus formed answers for sustaining the saddle-like seat C', which seat a single person can straddle and therefrom operate with his feet the treadles of the power-shaft  $p$ . This saddle-seat, as well as the manner of operating the power-shaft by the feet therefrom, does not differ from the plan shown in my aforesaid patent, except that the saddle-support is made in two parts, and

these parts are made divisible at  $c^5$ , and the rear portion is removable from the platform at the will of the owner of the boat. In connection with this divisible saddle-support for a saddle-like seat, another support,  $C^6$ , is provided upon the platform B. This support is a broad board with knee-braces between it and the platform, and it has stationary standards  $C^4$  extending from it in form of bows, one on each of its sides or edges. These bows have oblong slots  $c^9$  through their top portions, and through these slots legs  $C^5$  of a buggy-like seat  $C^3$  can be passed downward when the rear portion,  $c'$ , of the saddle-support C is removed, as illustrated in Figs. 2 and 3. The buggy-like seat is adapted for seating a lady and gentleman, or two or more persons. The legs  $C^5$  of this seat are provided respectively with a series of adjusting-holes, and in the support  $C^6$ , on each of its sides or edges, a corresponding-sized hole is formed. On the rear side of the support  $C^6$  a spiral spring,  $e^6$ , is fastened, and to the ends of this spring fastening-pins  $c^7$  are applied. When the legs of the seat are passed down through the slots in the standards and its proper altitude for the persons who are to operate the treadles, and thereby the propeller is secured, the pins  $c^7$  are passed horizontally through the holes in the legs  $C^5$  and into the holes in the support  $C^6$ , and by this means the seat is secured in position, the pins being kept in their places by the horizontal pull of the spring, as such pull is in the direction of the length of the pins.

By withdrawing the pins  $c^7$  and raising or lowering the seat  $C^3$  and again setting the pins in a different set of the holes of the legs  $C^5$ , the altitude of the seat  $C^3$  can be changed to suit the different lengths of the limbs of persons who may sit upon it.

By thus providing the marine velocipede with two seat-supports and two kinds of removable and interchangeable seats, either one or two or more persons may be carried by it, and the treadles may be operated either by one person or by two persons—that is, by riding on the saddle-like seat one person can operate the propeller with his two feet upon the treadles, and by riding on the buggy-seat one foot of one person may be placed on one treadle and one foot of another person on the other treadle for the purpose of operating the propeller; and if only one person is desirous of using the boat the seat  $C^3$  can be removed and its weight thus withdrawn; and if two persons desire to use the boat the saddle-like seat and the part of the support to which it is attached can be removed, and thus unnecessary weight removed. It is also a great convenience to have the seat which is not in use out of the way.

The standards  $C^4$  of the support  $C^6$  admit of the rear quadrantal portion,  $c'$ , of the saddle-support C being adjusted to its position, and thus it is not necessary to remove the said support  $C^6$  with the seat  $C^3$ ; but if it is desirable, this support might be removed also. It, how-

ever, is far more convenient to have this support a fixture of the boat, the same as the rear portion,  $c'$ , of the saddle-support C is a fixture thereof.

On top of the treadles leather loops  $H^2$  for receiving the feet of the operator are provided, and these loops are perforated and provided with buckles, the tongues of which can be fastened in different holes, according to the size of the feet of the operator. By means of these loops the feet of the operator are kept in contact with and prevented from slipping off the treadles, and thus a greater uniformity in the motion is secured. The treadles, as usual, may be weighted on their under side, so as to insure their return to a position which will bring the loops always on their upper sides.

The rudder R has its pivot or shaft provided with a support in rear of the cross-bar  $a^3$  of the boat. This support consists of two strong converging beams,  $a^6$ , which extend out from the ends of the cross-bar  $a^3$  and unite in rear of the same centrally between the boats A A'. The beams  $a^6$  should be firmly bolted to the cross-bar  $a^3$ . This mode of supporting the rudder places it some distance in rear and out of the way of the propeller, although arranged to work therewith on the same line or in the same intermediate position between the boats. At the upper end of the shaft or pivot of the rudder a yoke-bar,  $k'$ , similar to the one,  $k$ , on the platform, is provided, and the cords  $j j$  for working the rudder are crossed and attached to the two yokes, and through the rod  $l$  and arms  $l'$  the rudder is operated by a person riding either on the saddle-like seat or buggy-like seat, as the case may be.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the supporting-platform of a marine velocipede, as B, of an arch for supporting the saddle, as C, said arch being divisible, as shown, and one part, as  $c'$ , carrying the saddle, made removable without disturbing the other part, substantially as and for the purpose set forth.

2. The combination, with the supporting-platform of a marine velocipede, as B, of an arch for supporting the saddle, as C, said arch being divisible, as shown, and one part, as  $c'$ , carrying the saddle, made removable without disturbing the other part, and an additional seat-support, as  $C^6$ , which may be used with a seat, as  $C^3$ , when the part  $c'$  has been removed, substantially as and for the purpose described.

3. The combination, with the cross-bar  $a^3$ , extending from boat to boat or float to float, of the braces  $a^6$ , extending backward and forming a rudder-support, and the bracing device  $E^2$ , extending from bar  $a^3$  downward and forming a propeller-support, said parts operating, in connection with the steering and driving gear, substantially as set forth.

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