(No Model.) 2 Sheets—Sheet 1.

S. E. MAXON.

MARINE VELOCIPEDE.

No. 573,828. Patented Dec. 22, 1896.

Fig. 1.

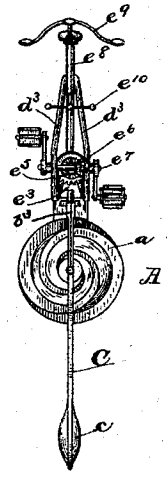


Fig. 2.

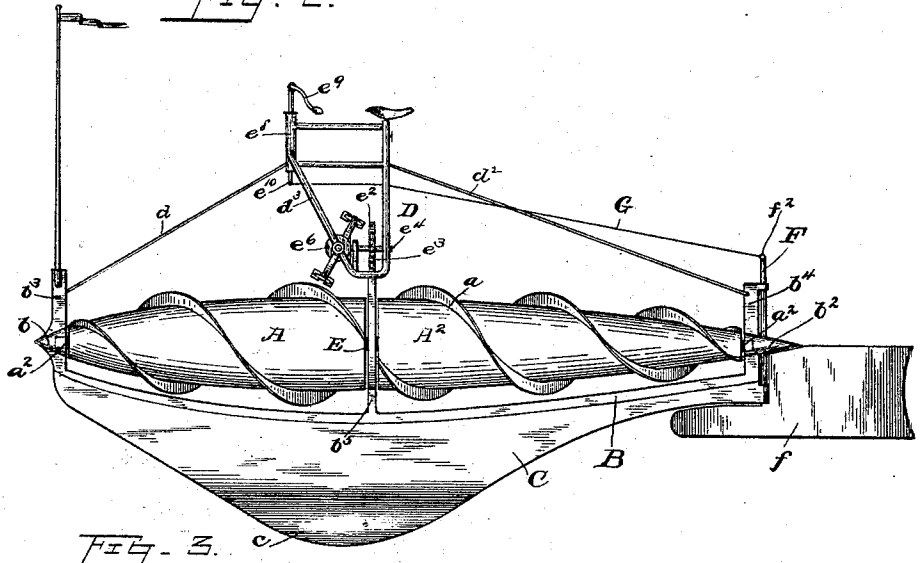
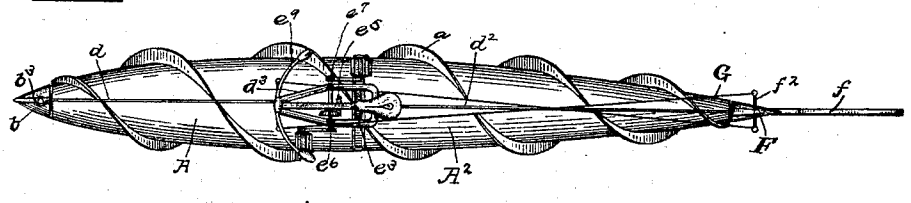


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

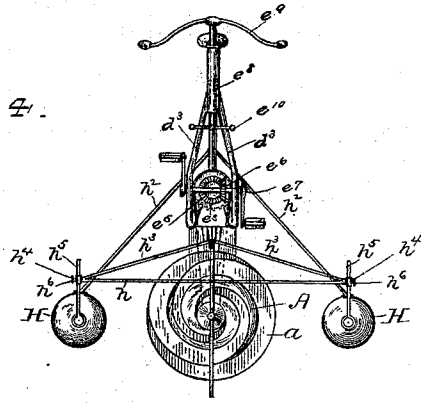


Fig. 5.

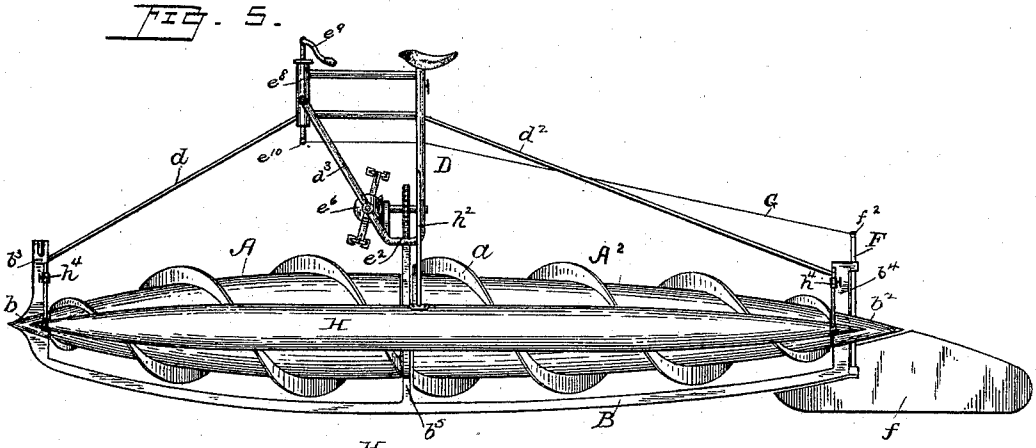


Fig. 6.

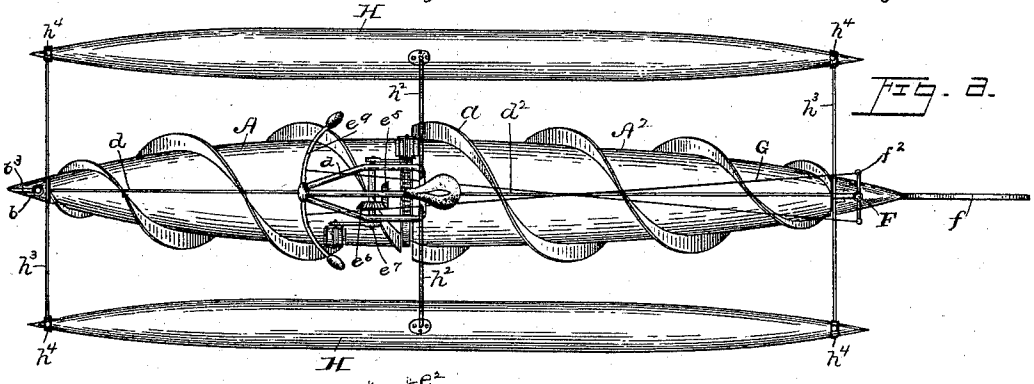


Fig. 7.

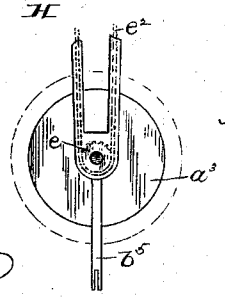
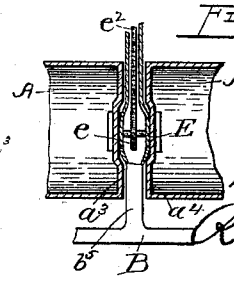


Fig. 8.



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UNITED STATES PATENT OFFICE.

STILES E. MAXON, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO L. W. WYNKOOP, J. M. NICKUM, AND W. J. KELLY, OF SAME PLACE.

MARINE VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 573,828, dated December 22, 1896.

Application filed June 2, 1896. Serial No. 594,011. (No model.)

To all whom it may concern:

Be it known that I, STILES E. MAXON, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, 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.

This invention relates to marine velocipedes.

The object is to produce a structure that may be propelled with rapidity and ease over smooth or rough water without danger of capsizing or sinking; furthermore, to provide a structure adapted for navigating in either deep or shallow water, and which may be utilized, among other and varied uses, as a carrier of a life-line from a stranded or wrecked vessel to the shore; furthermore, to provide a structure adapted to perform the functions above noted which shall be of great simplicity of construction, high efficiency and durability in use, and in which the operative parts will not be liable to derangement from long-continued use.

The device characterized by my invention, as before stated, is adapted for use in either deep or shallow water. In a structure adapted for use in deep water I provide a body portion constituting a float, which may be of any preferred shape in longitudinal section, but preferably fusiform, with a helically-arranged spiral flute or flange extending from stem to stern, rigid with the body portion, and constituting, in conjunction therewith, the propeller, or, in other words, the propeller constitutes the buoy or float of the apparatus. Supported from the body portion, and preferably about midway of its length, is a seat for the operator. This seat may be supported in various ways, but for simplicity of arrangement and as a matter of specific improvement I prefer to construct the body portion in two sections and support the seat upon a standard projecting upward from the keel between the body portions. This support, together with the closed headed ends of the adjacent faces of the body portions, constitutes a bearing for a shaft rigid with the ends of the body portions, but loose with relation to the standard or upright from the keel, and on this shaft is rigidly mounted a sprocket-wheel, around which passes a sprocket-chain to a sprocket-wheel on the main drive or pedal shaft.

If preferred, the pedal-cranks may be keyed directly to the drive-shaft, as in an ordinary bicycle, but for purposes of obtaining speed and gaining power I prefer to employ a train of gearing, in this instance two bevel-gears, one of which is mounted on the crank-shaft proper and the other on the main shaft.

To support the shell or body portion in position for rotation, I provide the keel with a cut-water having a bearing formed to receive a pintle projecting from the end of the shell that constitutes the bow of the apparatus and with a stern-post also formed with a bearing to receive a pintle projecting from the end of the shell that constitutes the stern of the apparatus. The keel, cut-water, and stern-post may be formed integral or in parts, and the bearings at the respective ends of the keel—that is to say, on the cut-water and stern-post—are preferably cone-shaped, thus forming a continuation of the shell.

In order to prevent capsizing of the structure when riding on rough water, I provide a false keel, preferably weighted, at the bottom, so as to balance the structure. This false keel may be held in place in any suitable manner, but I prefer to make the keel proper of two pieces, or to divide it longitudinally of its length, and to secure the false keel between these divisions. This arrangement will admit of the false keel being readily removed when desired for the purpose of transforming the structure into a shallow-water apparatus, the construction of which I will now briefly outline.

In the second embodiment of my invention, which is for a structure for use in shallow water, I provide in conjunction with the shell or body portion two supplemental floats supported in a suitable frame secured, respectively, to the seat-frame, cut-water, and stern-post. The supplemental floats are made adjustable with relation to their supporting-frame, so that the dip or line of submergence of the shell or body portion may be increased or diminished at will. Where these supple-

mental floats are employed, the false keel is dispensed with. It will be seen that this second embodiment of my invention is peculiarly adapted for traversing shallow water, the disposition of the supplemental floats with relation to the shell or body portion operating to prevent the structure from capsizing, and to this extent performing the same function as the false keel.

The frame supporting the supplemental floats may be readily attached to or detached from the main structure, so that the apparatus may be changed from a deep-water-traversing structure to a shallow-water-traversing structure with readiness and ease.

As a means for guiding the apparatus I provide a rudder, the post of which works in suitable bearings formed in the stern-post, and from a transversely-disposed tiller at the top of the post extend ropes or chains connecting with a cross-bar carried by the steering-post of the seat-frame. Where the false keel is employed, the rudder is adapted to project under the same, and where the keel is dispensed with the rudder is arranged to occupy a like position with regard to the keel proper. Thus instead of all the steering-surface of the rudder being aft of the rudder-post the surface is divided, part being forward and part aft of the rudder-post, and by this arrangement the apparatus may be turned in a much shorter space than would be possible with an ordinary form of rudder.

Further and specific details of construction will be hereinafter fully described.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated two forms of embodiment of my invention, although it is to be understood that other forms of embodiment thereof may be employed without departing from the spirit of the same, in which—

Figures 1, 2, and 3 designate, respectively, a front elevation, a side elevation, and a top plan view of the form of apparatus employing but one float and the false keel. Figs. 4, 5, and 6 designate, respectively, a front elevation, a side elevation, and a top plan view of the form of apparatus employing the supplemental floats. Fig. 7 is a sectional view taken through the shell or body portion at the point where the drive-shaft is connected with the shell, showing more particularly the casing or cover for inclosing the sprocket-chain and also the construction of the keel proper. Fig. 8 is a longitudinal sectional view taken through the main shell at the point where the sprocket-wheel shaft is secured to the two sections of the shell, showing more particularly the manner in which the shells are held assembled and also the disposition of the keel with relation thereto.

Referring to the drawings, and to Figs. 1, 2, and 3 thereof, A and A^2 designate the two sections of the shell or body portion of the structure, these parts, when assembled, presenting a cigar-shaped or fusiform body. The shell may be constructed of any suitable material, such as zinc, galvanized iron, aluminium, or the like, and has extending around it from stem to stern a helically-arranged flute or flange, preferably rigid with the shell and constituting in conjunction therewith the propeller. This flange a may be secured to the shell in any suitable manner, as by turning its base outward at right angles and securing it by rivets to the shell or by soldering it thereto. The ends of the shell are truncated and are provided with pintles a^2, adapted to work in bearings, by preference roller-bearings, formed in cone-shaped journal-boxes b and b^2, carried by the cut-water and stern-post b^3 and b^4, respectively, the latter being secured in any suitable manner to the keel B. The keel is formed in two pieces or is channeled longitudinally of its length, as shown in Fig. 7, and between these pieces, or in the channel, is secured the false keel C, which is by preference widest at amidships and is weighted, as at c, to balance the weight of the rider.

The keel B is arranged a sufficient distance below the flange a to prevent any interference in the proper working of the propeller, and is provided, preferably about midway of its length, with an upward-extending standard or projection b^5, which extends above the upper surface of the shell and constitutes a support for the seat-frame D, the latter being braced fore and aft by brace-rods d d^2, respectively, as clearly shown in Figs. 1 and 5. This standard constitutes also a bearing for a shaft E, which is rigidly attached to the opposed heads a^3 a^4 of the sections of the shell, the said shaft carrying a sprocket-wheel e, around which passes a sprocket-chain e^2 to a sprocket-wheel e^3 on the seat-frame D. The standard b^5 also constitutes a housing or casing for the chain e^2 to protect it from the action of the water, and, if desired, the sprocket-wheel e^3 may also be housed for the same purpose. The shaft e^4 of the sprocket-wheel e^3 carries a miter-gear e^5, which is engaged by a similar gear e^6 on the crank-shaft e^7, the latter shaft being journaled in suitable bearings in the front forks d^3 of the seat-frame D. These front forks also support the steering-head post e^8, which latter carries at its upper end suitable bars e^9 and at its lower end a cross-bar e^{10}.

The stern-post is provided with suitable bearings, in which works the rudder-post F, carrying the rudder f, which latter projects fore and aft beyond the rudder-post and under and in alinement with the false keel C. By thus mounting the rudder I am enabled to turn the apparatus in a very small space. The rudder-post carries at its upper end a cross-bar or tiller-arm f^2, with which connect ropes or chains G, leading from the cross-bar e^{10} of the steering-head post e^8.

In Figs. 4, 5, and 6 I have shown the apparatus with the false keel C detached from it, and in lieu thereof I employ supplemental

floats H H, which are by preference also fusiform in shape. These floats are supported by a frame comprising arched or inverted-V-shaped braces h h^2 h^3, connecting with the floats at their two ends and at a point intermediate of their length. The braces h and h^3 are provided with vertical hollow bearings h^4, in which are adjustably mounted the supports h^5 of the floats, suitable set-screws h^6 being employed for securing the supports h^5 at adjusted positions. By raising and lowering the supports the dip or line of submergence of the body portion or shell may be increased or diminished at will. As here shown the braces h, h^2, and h^3 are secured, respectively, to the cut-water, seat-support, and stern-post, but it is to be understood that they may be secured at other points on the structure, as may be found desirable or convenient.

The remaining parts of the apparatus are the same as those shown in Figs. 1, 2, and 3, and therefore need no further description.

If desired, a number of seats may be employed to be arranged in tandem, each alternate seat being by preference supported on the float in the manner already described, the driving mechanism of each seat being connected by chains with the driving mechanism of the front seat, and as this arrangement will be obvious illustration is deemed unnecessary.

It is also to be understood that instead of having the flange to rotate with the shell the shell may be stationary and the flange be made to rotate about it; also, that an electric motor or gasolene-engine may be employed to propel the apparatus without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame, and a housing or casing for the sprocket-chain, and driving mechanism on the frame for imparting rotary motion to the body portion, substantially as described.

2. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame and a housing or casing for the sprocket-chain, driving mechanism on the frame for imparting rotary motion to the body portion, and means for maintaining an upright position of the velocipede when in use, substantially as described.

3. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame and a housing or casing for the sprocket-chain, driving mechanism on the frame for imparting rotary motion to the body portion, and a weighted false keel for maintaining an upright position of the velocipede when in use, substantially as described.

4. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections, a seat-frame supported by the upright, driving mechanism on the frame for imparting rotary motion to the body portion, and steering mechanism operated from the seat, substantially as described.

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

STILES E. MAXON.

Witnesses:
H. E. MITCHELL,
H. C. ROBERTSON.