W. D. MOORE.

Water-Velocipede.

No. 206,346. Patented July 23, 1878.

Fig 1.

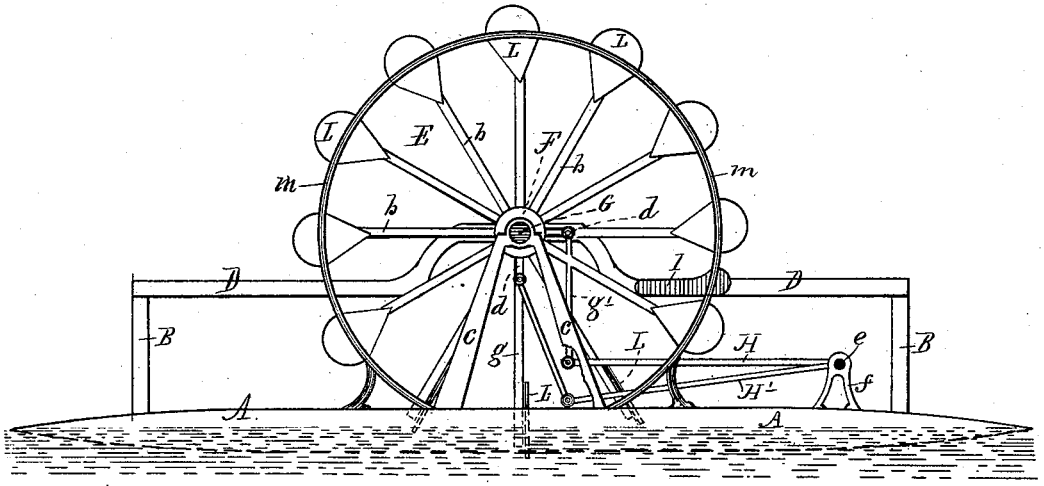


Fig 2.

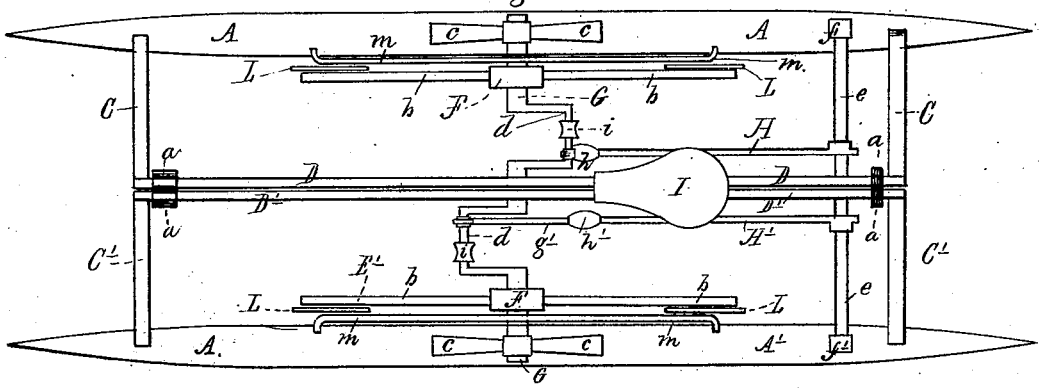


Fig 3.

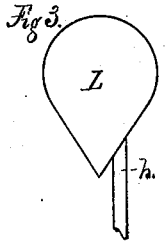
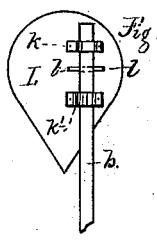


Fig 4.



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UNITED STATES PATENT OFFICE.

WILLIAM D. MOORE, OF NEW YORK, N. Y., ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO MARY A. T. ROONEY, MARY E. KOONZE, AND ELIZA TOBIN, OF SAME PLACE.

IMPROVEMENT IN WATER-VELOCIPEDES.

Specification forming part of Letters Patent No. **206,346**, dated July 23, 1878; application filed May 9, 1878.

To all whom it may concern:

Be it known that I, WILLIAM D. MOORE, of the city, county, and State of New York, have invented certain new and useful Improvements in Water-Velocipedes, of which the following is a specification:

This invention relates to that class of boats which are propelled by means of paddle-wheels operated by manual power. The particular class of such vessels to which my invention belongs has been designated as "water-velocipedes" or "aquapeeds;" and it consists in a certain novel construction of the vessel, and in the mode of propelling and steering the same, all of which will be hereinafter fully pointed out and described.

In the drawings which form an essential part of this specification, Figure 1 represents a side elevation of a boat or vessel in which which my invention is fully embodied. Fig. 2 is a plan view of the same; and Figs. 3 and 4 are detached views of the floats or paddles.

The same letters of reference marked on the several figures of the drawings will designate and locate corresponding parts.

Many and varied attempts have been made to produce water-velocipedes or boats arranged to be propelled by manual power; but such efforts have been confined simply to the application, on a modified scale, of the ordinary form of paddle-wheels provided with cranks, or cranks and treadles, and a steering apparatus of the usual nature. This system requires a great exertion of power, much more than an ordinary person can supply, except for a limited period of time, the apparatus, withal, being bulky and costly.

In my present invention I have aimed to provide a light vessel of great buoyant power, provided with two independently-acting propelling paddle-wheels, which are armed with self-acting adjusting-floats, such wheels being so hung and arranged as to be driven by treadles operated by the feet, or by the hands alone, or by the combined use of both. The wheels being detached and independent of each other, one may be operated alone, causing the boat to turn on that side, or one may be operated in a reverse direction, thus giving the operator complete control of the vessel's movements without the intervention or use of a steering apparatus.

A A′ designate the body of the vessel or boat, which, practically, is two cigar-shaped air-tight vessels, which may be of wood, paper properly prepared, or of light sheet metal, as mechanical skill may deem the best suited for the purpose. The length and size of these floats and their buoying and sustaining capacity may be increased or decreased, according to circumstances. These two floats are each provided with an upright frame, B, rising from each end, or from near the ends, thereof, which frames support a cross-frame, C C′, which, in turn, support longitudinal frames D D′, the two latter lying parallel with and close to each other, (see Fig. 2,) and providing a means of securing the two sections together to form the complete vessel, and for supporting the various operating and other parts of the apparatus. The mode of lashing or securing these frames D D′ together may be by means of a series of clamps, *a*, or by means of a series of hinges, or in such other manner as may be approved.

Suitable braces and rods may be introduced and used to strengthen and brace the two floats and the framing. Such parts, however, are not shown in the drawing, as their application is obvious, and as they are not the subject of invention.

E E′ are the wheels, which consist of a series of rods or shafts, *b*, projecting from a hub, F, which is mounted on a shaft, G, such shaft having its bearings at one end in the frames D D′, and at the other end in a standard, C, which rises from the floats A A′ for that purpose. These shafts G are shaped so as to form the cranks *d d*, by which the rotary motion is given to the shaft and the wheels.

H H′ are the treadles, the rear ends of which are secured to a shaft, *c*, that is supported by, and rocks in, two studs or stands, *f f′*, attached to the floats A A′, this shaft also assisting to steady the floats. To the forward end of these treadles the connecting-rods *g g′* are attached, they also being secured to the cranks *d d* in any approved manner, the treadles also being provided with suitable foot-rests *h h′*. Sleeves *i i* are applied to the cranks *d d*, for the pur-

pose of providing a means for grasping and operating them by the hands when desired so to do.

A saddle or seat, I, is provided for the operator, and is secured in place upon the frames D D′. This saddle or seat is located in such position that the treadles and cranks are easily operated, either by means of the feet alone or by both hands and feet at the same time.

Although any of the usual forms of paddles or floats may be applied to the wheels G, yet I prefer the form as shown in the drawings, the floats L being heart-shaped, and secured on the rods or shafts *b* (near their ends) by means of the straps or bearings *k k′*, which are pinned to the floats L, the rods *b* passing through them, thus permitting the floats to turn freely thereon.

The extent of the rotary movement of these floats is determined and governed by a controlling pin or stop, *l*, attached to the rods *b;* but any other suitable mechanical means of applying these floats to the shafts and controlling them may be used. These floats are so adjusted on the shafts that about two-thirds of the surface thereof is thrown to one side of the shafts, the object being to cause these floats to automatically present the full surface as they enter the water, the resistance offered by the water causing them to so act. As the floats leave the water they strike against a guide, *m*, which is attached to the boats A for that purpose. This causes them to turn from their flat position when acting on the water to a position nearly at right angles thereto. This position is best seen in Fig. 1, the dotted lines of the floats immersed indicating their position in the water. The result is that the floats meet with no resistance from the atmosphere, and thus lessening the amount of power required to operate them. The guide *m* may be continued on the curved line described by the floats, and attached to the floats A A′, as shown in Fig. 1, so that the paddle-floats are held in their position from the time they leave the water until they again enter it.

It is plainly evident that seats for passengers may be affixed to the framing; also, that the paddle-wheels may be partially boxed in, so as to keep the water from the operator and passengers; but these, being simply matters of detail in actual construction, are not shown in the drawings. The wheels may be arranged for ready detachment, and the vessel arranged to fold up on the frames D D′.

In some cases this form of boat may be enlarged and its passenger-carrying capacity increased. I therefore do not limit myself to any particular arrangement of seats, or their location on the framing or boats. I also propose to use any other motive power for driving the wheels, combined with the treadle arrangements described, so that either one may be alone used, or both powers combined.

What I claim as my invention is—

1. In combination with a boat or vessel formed in two detachable sections, two independent paddle-wheels, armed with adjustable feathering floats, and arranged for separate operation by treadles and cranks, substantially as herein shown and set forth.

2. The combination, in a sectional boat or vessel, of the floats A A′, each having framing B C D, carrying two independent paddle-wheels, E, mounted on crank-shafts G, operating treadles H, and saddle I, all arranged and operating substantially as and for the purposes as herein shown and set forth.

3. The combination of the independent paddle-wheels E, having a series of shafts, *b*, rotating or rocking floats L, and the guide *m*, such guide arranged to "feather" the floats *b* and control them when not immersed in the water, all arranged and operating substantially as herein shown and set forth.

WILLIAM D. MOORE.

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