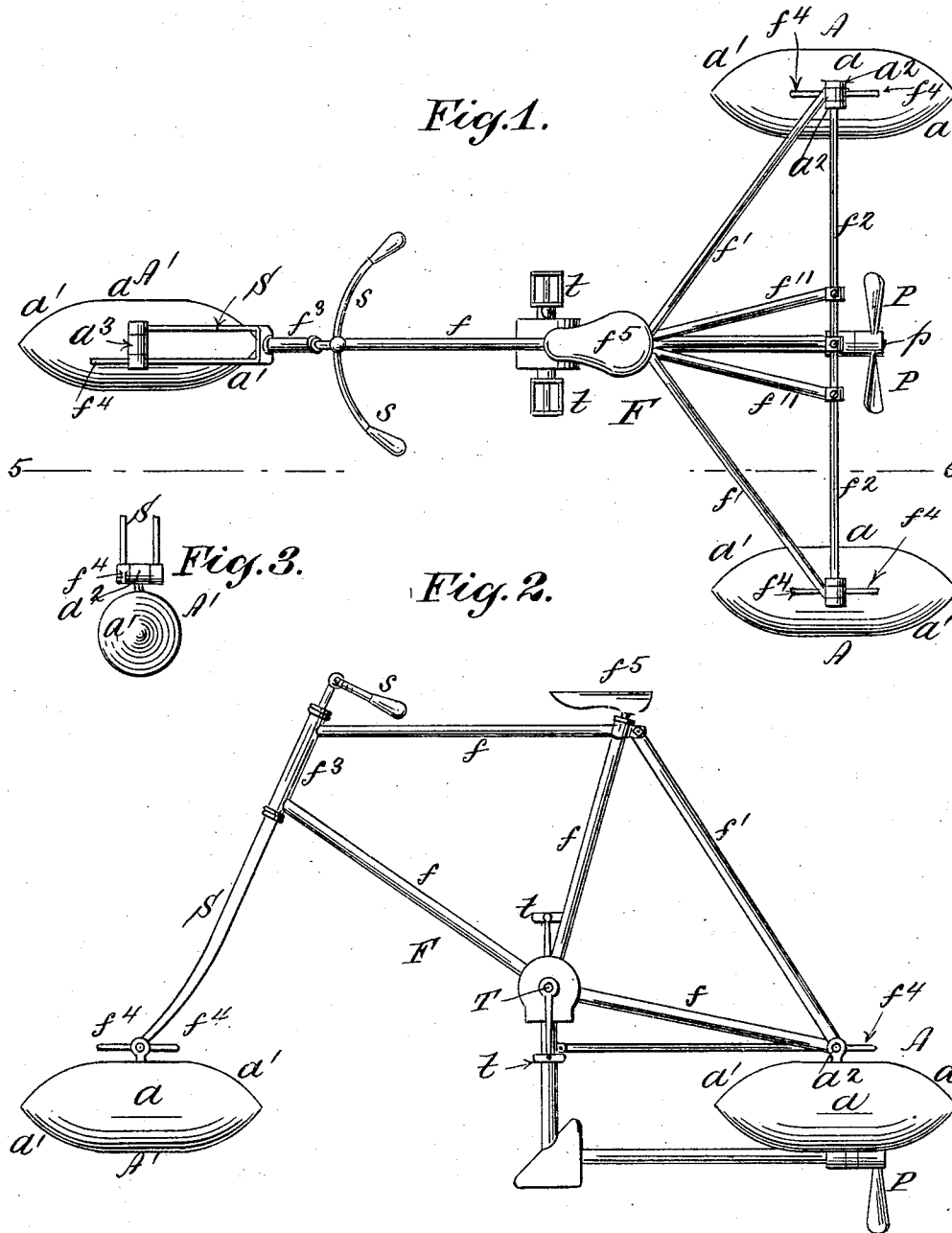


No. 858,093.

PATENTED JUNE 25, 1907.

J. H. MITCHELL.  
NAUTICAL VELOCIPEDE.  
APPLICATION FILED AUG. 7, 1906.

3 SHEETS--SHEET 1.



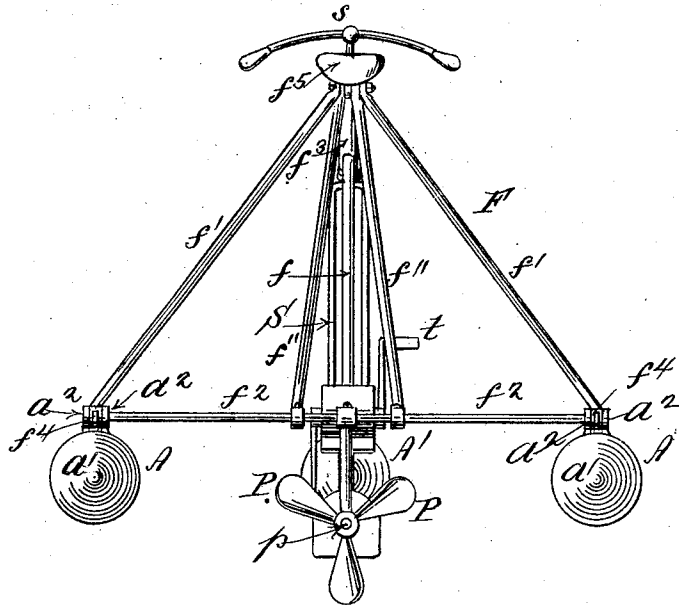
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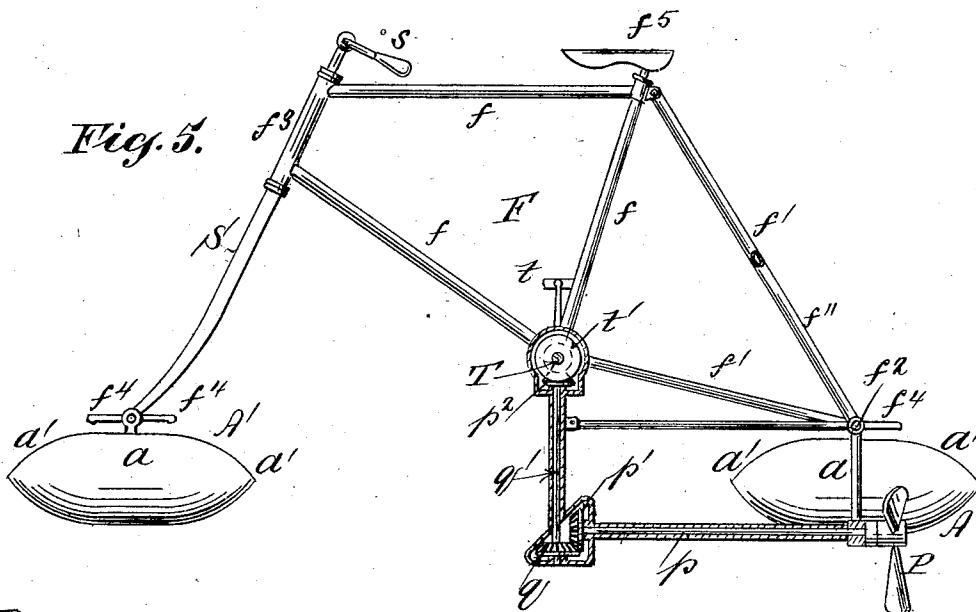
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3 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 5.*



Witnesses:  
D. W. Gardner.  
S. Stein

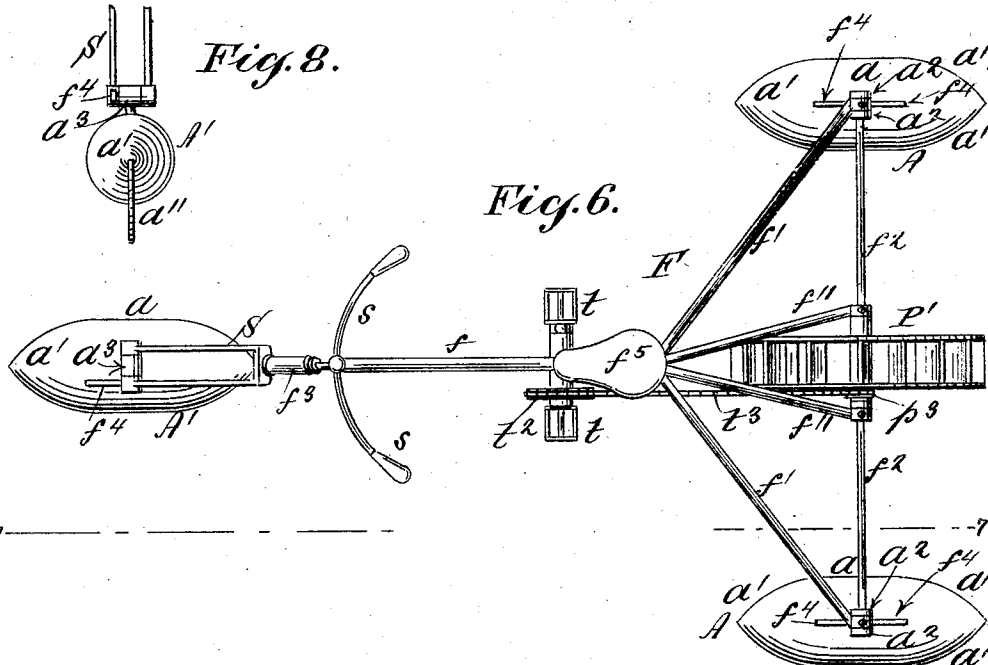
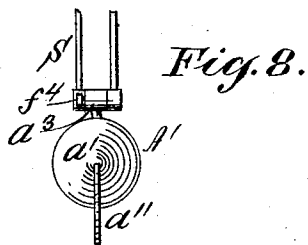
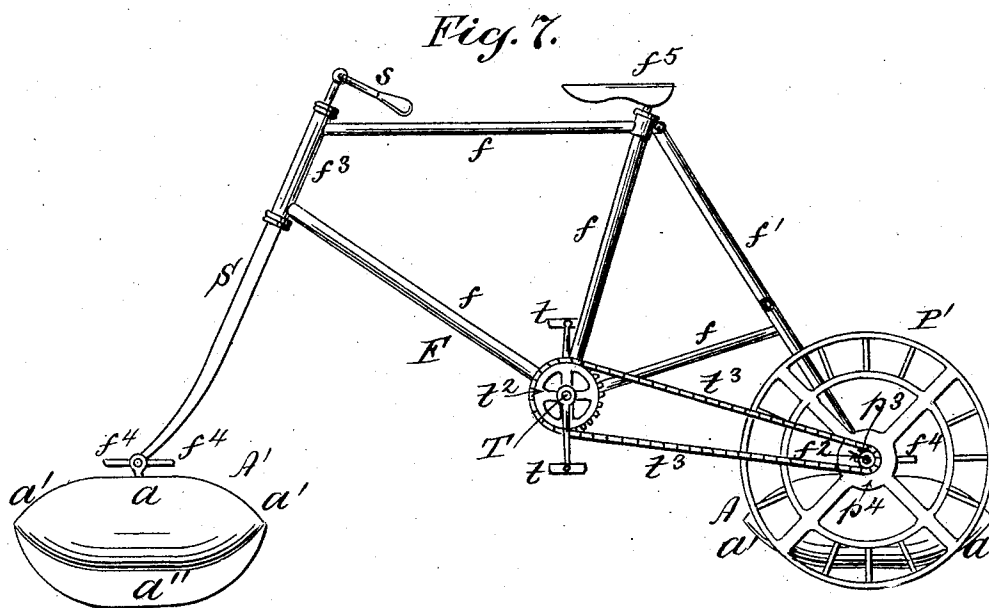
Inventor:  
John H. Mitchell  
By his Attorney  
Geo. W. M. M. M.

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3 SHEETS—SHEET 3.



Witnesses:  
W. Gardner.  
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Inventor:  
John H. Mitchell  
By his Attorney  
Geo. W. M. M. M.

# UNITED STATES PATENT OFFICE.

JOHN H. MITCHELL, OF NEW YORK, N. Y.

## NAUTICAL VELOCIPEDE.

No. 858,093.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed August 7, 1906. Serial No. 329,552.

*To all whom it may concern:*

Be it known that I, JOHN H. MITCHELL, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Nautical Velocipedes, of which the following is a specification.

My invention is designed to afford a nautical velocipede of light but substantial structure, in which the maximum of stability is attained by means which also facilitate the steering of the vehicle.

My invention consists in the specific construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1, is a top view or plan of my improved nautical velocipede; Fig. 2, a side elevation, and Fig. 3, an elevation of the front float and adjoining parts; Fig. 4, an end elevation of the parts shown in Fig. 2; Fig. 5, is a longitudinal vertical section taken upon plane of line 5—5—Fig. 1; the gear casing being also shown in section; Fig. 6, is a plan of a modification; Fig. 7, is a longitudinal section upon plane of line 7—7—Fig. 6. Fig. 8, is a front view of the float shown in Fig. 6.

The floats A, A', may be of any desired form and construction. I prefer however to make them of elongated form with a central cylindrical portion *a*, merging into ogival or other convergent shaped ends *a'*, so as to afford for a given size a maximum of buoyancy or displacement with a minimum of resistance in the direction of motion,—that is in lines parallel to the longitudinal axis of each float. They may be advantageously made hollow, of thin wood, sheet metal, or other suitable material, shells of comparatively thin sheet aluminium being preferable as combining lightness with strength. These floats A, A', are pivotally connected to a skeleton superstructure or frame F, of any suitable construction, and I do not restrict myself to that shown in the drawings, which consists in part of a series of tubular members *f*, and braces *f'*, preferably of aluminium, arranged somewhat after the manner of an ordinary cycle frame. The rear floats A, A, are articulated to the rear cross bar *f*<sup>2</sup>, of the frame, by means of eye lugs *a*<sup>2</sup>, *a*<sup>2</sup>; and the front or steering float A', is provided with an eye lug *a*<sup>3</sup>, pivoted to and between the bifurcated end of a steering bar S pivotally

mounted in a head socket *f*<sup>3</sup>, of the skeleton frame F and provided with a handle bar *s*, by which the longitudinal axis of the said steering float A', may be regulated with relation to the central vertical plane of the frame,—the rear floats A, A, being maintained with their longitudinal axes always parallel to said vertical longitudinal plane of the machine, and the articulation of all three of the floats being such that they can move on their pivots only vertically. Thus the direction of the longitudinal axis of the front float A', will determine and control the direction of motion as will be readily understood.

The vertical dip or oscillation of the floats is restricted by stops *f*<sup>4</sup>, upon the frame, so that the floats are free to adapt themselves to the waves within certain limits only, to insure an approximately horizontal bearing and displacement under all conditions. If desired the front or steering float A', may be provided with a longitudinal fin or keel *a''*, as shown in Figs. 7 and 8, for the purpose of aiding in steering the vehicle, in which case said float A', need not necessarily be of the special form shown.

My nautical velocipede may be propelled by any desired means, either manually, or by the use of a suitable motor. In the drawings I have shown treadles *t*, *t*, on a shaft T supported in bearings on the frame and arranged to be operated by a person resting upon the seat *f*<sup>5</sup>, on the skeleton frame F,—the shaft T being used to drive either a propeller P or a paddle wheel P', as may be found most expedient; or as is obvious the shaft T may be driven by a small motor supported upon the frame and arranged and operating in a manner similar to those used upon motor bicycles.

Where a screw propeller P is used, it may be mounted upon a shaft *p*, supported in bearings in the frame with its axis parallel to and coinciding with the vertical longitudinal central plane of the said frame,—the inner end of the shaft *p*, being provided with a pinion *p*<sup>1</sup>, meshing with a pinion *q*, on the lower end of the shaft *q'*, to the upper end of which is secured the pinion *p*<sup>2</sup>, meshing into the driving gear *t'*, upon the power shaft T. These shafts and gears are preferably incased as indicated, in a well known manner.

Where a paddle wheel P', is used in lieu of the screw propeller P, a sprocket wheel *t*<sup>2</sup>, may be substituted for the driving gear *t'*,

upon the power shaft T, said sprocket wheel  $t^2$  driving a sprocket chain  $t^3$ , by which motion is transmitted to the sprocket wheel  $p^3$ , on the hub  $p^4$ , of the paddle wheel P' which is mounted upon the rear cross member  $f^2$ , between members of the rear fork  $f''$ , of said frame.

By arranging the floats A, A, A', relatively at the vertices of a triangle I enable the vehicle to adapt itself readily and quickly to the numerous variations in level to which the floats are subjected in use,—on the principle that the triangulate bearings are each and all free to independently conform to the surface upon which they rest. Thus a maximum of stability and evenness of motion is insured since none of the floats can leave the water under ordinary conditions of use, and hence the vehicle is easily controlled and steered. The utilization of the forward float as a means by which the course of the vehicle may be varied and governed is also an important and distinguishing feature of my construction and arrangement of parts, although as a matter of fact if preferred my triangularly arranged floats might all be fixed, or susceptible of vertical oscillation only, and a rudder be employed to steer the vehicle.

The use of the three floats being the essential and distinguishing feature of my invention as hereinbefore set forth, it is obvious that it is practicable to reverse the arrangement of propelling mechanism &c., with relation thereto, as I have found by actual experience; in which case the steering float A', constitutes the rear and the other two floats A, A, the front of the vehicle,—the results

being essentially the same in either arrangement.

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

1. In a nautical velocipede, the combination with suitable frame work and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other two at the rear of the vehicle, and each pivoted to the frame by means which admit of vertical oscillation only, for the purpose described.

2. In a nautical velocipede, the combination with suitable framework and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other two at the rear of the vehicle, each pivoted to the frame by means which admit of vertical oscillation only, and stops upon the frame for limiting the extent of such vertical oscillation, for the purpose described.

3. In a nautical velocipede, the combination with suitable frame work and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other at the rear of the vehicle, each float consisting of an elongated hollow shell having a cylindrical body with ogival ends and being pivoted to the frame by means which admit of vertical oscillation only, and stops upon the frame for limiting the extent of such vertical oscillation, for the purpose described.

JOHN H. MITCHELL.

Witnesses:

D. W. GARDNER,  
GEO. WM. MIATT.