No. 668,516. Patented Feb. 19, 1901.

G. A. HAGENA.

WATER CYCLE.

(Application filed Jan. 6, 1900.)

(No Model.)

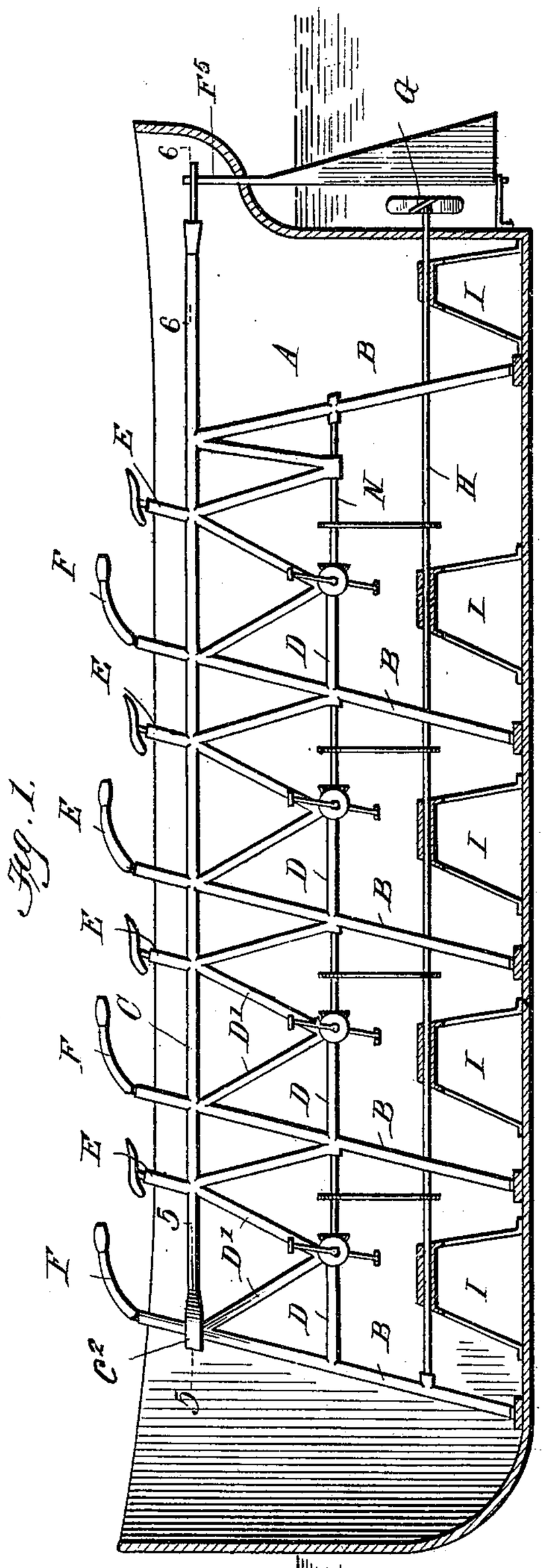

Fig. 1.

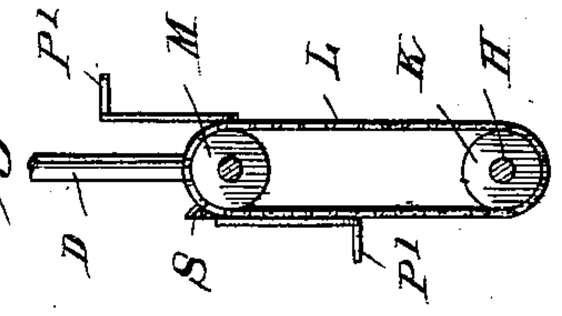

Fig. 3.

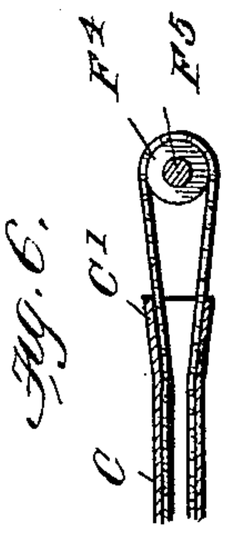

Fig. 6.

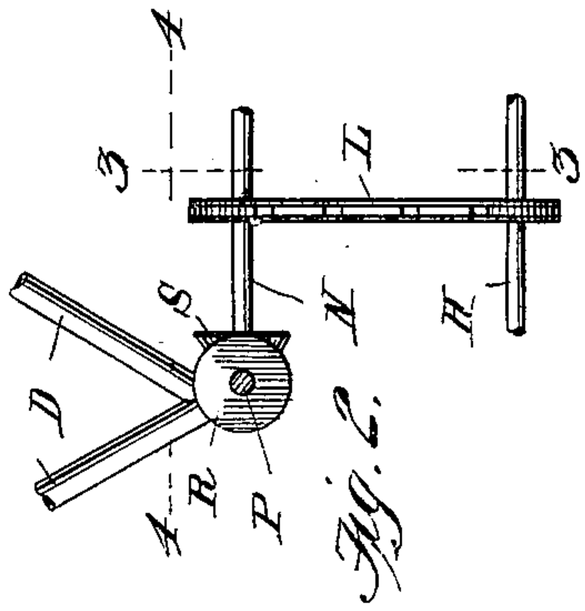

Fig. 2.

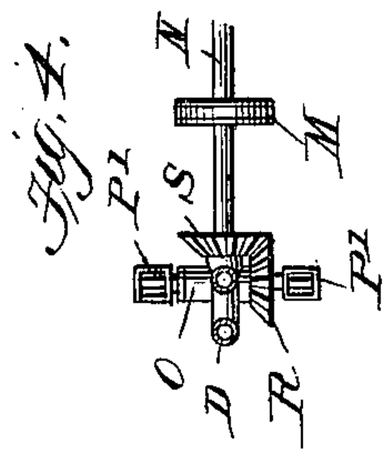

Fig. 4.

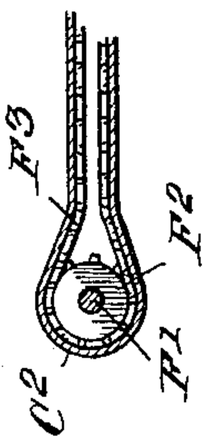

Fig. 5.

Witnesses
H. W. Bailey,
Chas. E. Brock.

Inventor
G. A. Hagena,
by Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE ADAM HAGENA, OF NEW ORLEANS, LOUISIANA.

WATER-CYCLE.

SPECIFICATION forming part of Letters Patent No. 668,516, dated February 19, 1901.

Application filed January 6, 1900. Serial No. 602. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ADAM HAGENA, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Water-Cycles, of which the following is a specification.

This invention is an improved water-cycle, or more especially a means for propelling a vessel by means of foot-power, the object being to provide a simple and efficient means by which a number of persons may be employed for the purpose of propelling the vessel through the water; and with this object in view the invention consists in the peculiar construction of the various parts and in their novel combination and arrangement, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a sectional view of the hull of a boat, the driving mechanism being shown in elevation. Fig. 2 is a detail perspective view showing the main features of the power mechanism. Fig. 3 is a sectional view on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a section on the line 5 5 of Fig. 1, and Fig. 6 is a section on the line 6 6 of Fig. 1.

Referring to the drawings, A indicates a boat or vessel, which may be of any suitable size. A series of upright tubes B are arranged centrally within the hull and longitudinally one behind the other, said tubes being connected adjacent to their upper ends by the upper horizontal tube C, said tube extending some distance beyond the rear upright B for a purpose hereinafter described.

A seat E is arranged upon the tube or bar C to the rear of each upright post B, and a handle-bar F is attached to the upper end of each upright, the front handle-bars being connected to a steering-head F′, carrying a sprocket-wheel F^2, operating upon the sprocket-chain F^3, which travels in the tube C and operates the sprocket F^4, mounted upon the upper end of the rotary shaft F^5, the rear end of the tube C being expanded, as shown at C′, and the forward end is enlarged, as shown at C^2. By this means the boat can be readily steered by the person occupying the front seat.

Any form of propelling mechanism may be used, but the following is preferred.

G represents the propeller, mounted upon the rear end of the propeller-shaft H, which is journaled in suitable bearing-brackets I, arranged in the bottom of the boat, said shaft also passing through each upright post B. The propeller-shaft H has a series of sprockets K mounted thereon, said sprockets being driven by a sprocket-chain L, which receives its motion from a sprocket-wheel M, mounted upon a shaft N, said shaft being journaled between the front and rear uprights B and turning in horizontal tubes D, connected to each of the said uprights and also to the brace-tubes D′, extending from the upper tube C to the horizontal tube D and having a crank-hanger O arranged at the juncture. In the said crank-hanger is journaled a crank-shaft P, driven by the pedals P′, each crank-shaft having the bevel-gear R mounted thereon and meshing with the bevel-gear S, which is rigidly connected to the shaft N, so that it will be readily understood that the operator, sitting upon the seat E, working the crank-shaft P by means of a pedal, will impart a rotary motion to the shaft N and through the medium of the sprocket-chain L will drive the propeller-shaft H, and inasmuch as there are a series of drive-shafts and gear connections it will be readily understood that a number of persons can be employed at one time for the purpose of rotating the propeller-shaft and force the boat forwardly through the water. In case it is desired to reverse the motion of the boat it can be accomplished by reversing the motion of the pedal. By having the steering-chain passing through the upper tube C all danger of interfering with the operator is avoided, and by having the propeller-shaft and the mechanism connected therewith at a point below the crank-pedal all danger of interfering with the said propeller-shaft is also avoided.

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

1. In a device of the kind described, the combination with a boat or vessel, of the frame having an upper horizontal tube carrying seats, the rudder arranged at the rear of the boat or vessel and having a sprocket

at its upper end and a steering-chain traveling in the upper horizontal tube and operated by a sprocket at the forward end, substantially as shown and described.

2. In a device of the kind described, the combination with a boat or vessel having a rudder arranged at the rear end thereof, of the upright tubes arranged within the boat or vessel, the horizontal tube connecting the said upright tubes, the front end of which is enlarged and the rear end expanded, and a steering-chain arranged in the upper horizontal tube and passing around the sprocket upon the rudder, and a sprocket carried by the steering-head within the front upright tube, all arranged and adapted to be operated, substantially as shown and described.

GEORGE ADAM HAGENA.

Witnesses:
JOSEPH SCHROEDER,
HENRY SHELLEY.