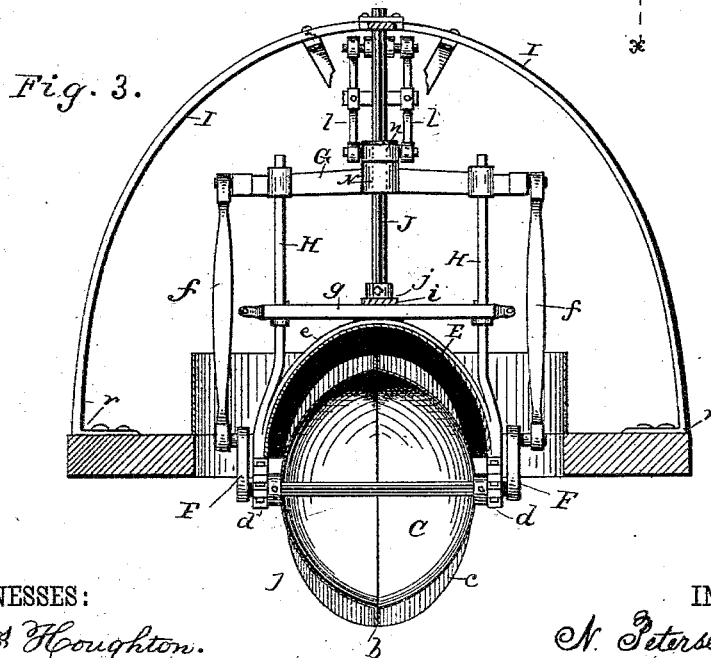
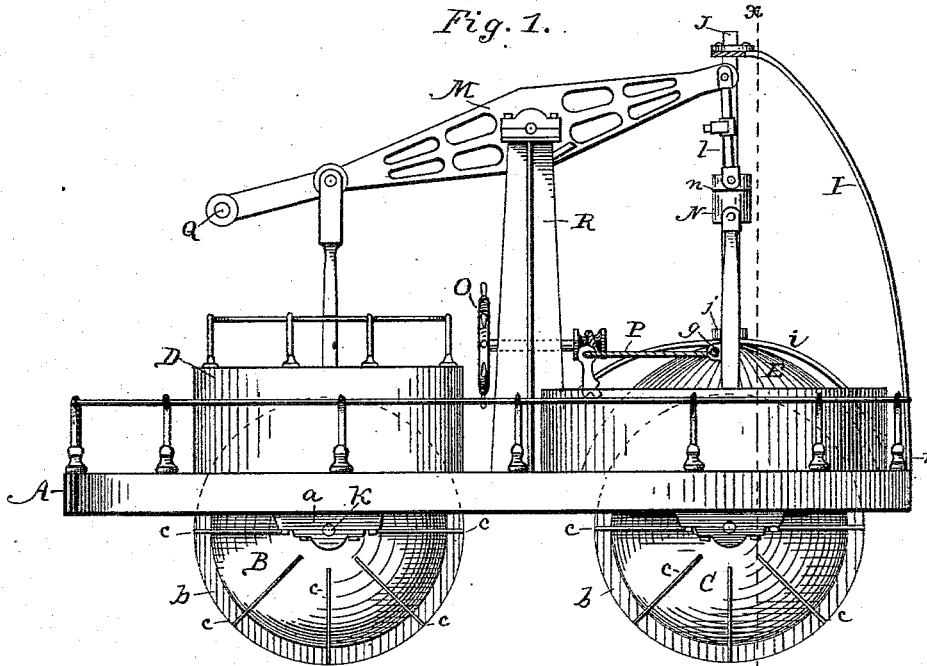


N. PETERSEN.

BUOYANT PROPELLER FOR VESSELS.

No. 296,613.

Patented Apr. 8, 1884.



WITNESSES:
Thos. Houghton.
W. K. Stevens.

INVENTOR:
N. Petersen
 BY *Munn & Co*
 ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

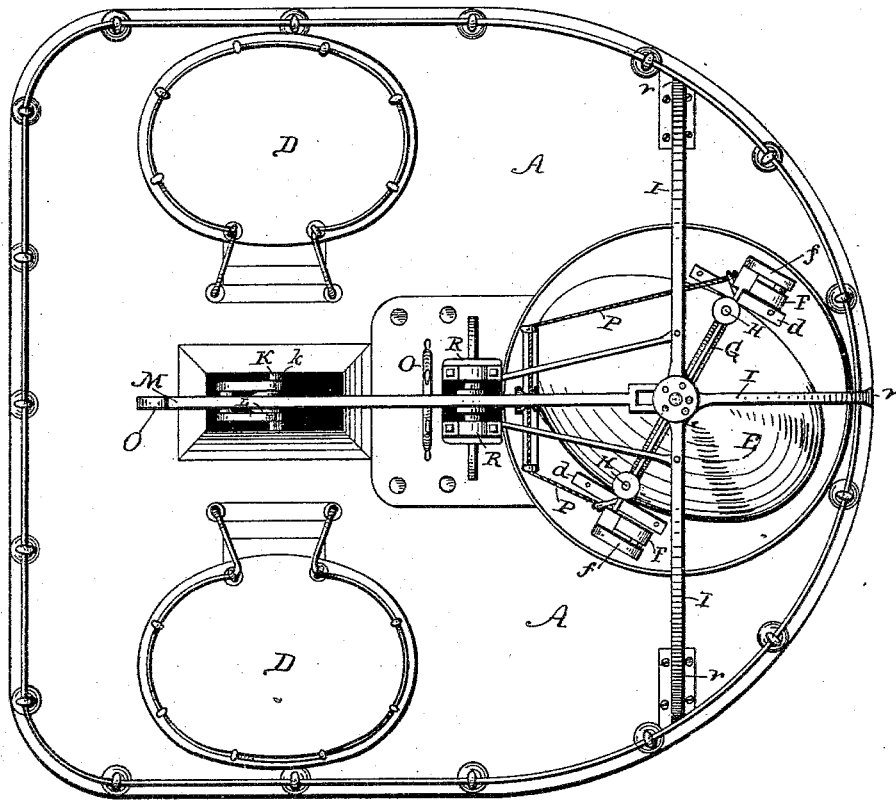
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Fig. 2.



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UNITED STATES PATENT OFFICE.

NICOLAI PETERSEN, OF CHARLESTON, SOUTH CAROLINA.

BUOYANT PROPELLER FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 296,613, dated April 8, 1884.

Application filed December 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, NICOLAI PETERSEN, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Wheel-Boats, of which the following is a description.

This invention relates to that class of boats which are floated upon their propelling-wheels; made as drums to exclude the water; and it has for its object to provide wheels which will float themselves and a superposed load, which wheels will at the same time serve as propelling-wheels; to mount a deck or cabin upon such wheels, so that one or more of the wheels may be turned for steering the boat, and to connect all the wheels to one driving-power.

To this end my invention consists in the construction and combination of parts forming a wheel-boat, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a plan showing the rudder turned starboard; and Fig. 3 is a transverse vertical section at *xx*, Fig. 1.

A represents the deck or body of the boat, having at its two sides bearings *a*, by which it is supported upon the shaft K of the main wheels B. The bow is supported upon the rudder C, which is one of the drive-wheels, at the same time serving as a rudder. The drive-wheels B B C are hollow and air-tight, made, preferably, of sheet metal, each in the form of a shell shaped like two arcs of a sphere joined at their edges. *b* is a flange surrounding the wheel at its greatest circumference, and *c* represents paddles projecting from the surface of each wheel in radial planes.

D D are stationary wheel-houses covering wheels B, and secured to the deck. E is the house or hood for the rudder-wheel C, secured to the frame in which said rudder is mounted. The said rudder-frame consists of a yoke, *e*, having at each end a bearing, *d*, for the shaft of wheel C.

F represents the cranks of wheels C, *f* the pitmen therefor, and G a reciprocating cross-head on which said pitmen are hung.

H H represent vertical bars secured to yoke *e* and to a cross-bar, *g*, and serving as guides for the reciprocating head G.

J is a vertical spindle secured to said rudder-

frame, and journaled to rotate in the lower yoke, *i*, and in the upper yoke, I, both of which yokes are firmly secured to the deck A. *j* is a collar secured on said spindle by a set-screw above the lower yoke, to prevent the rudder from dropping out of the boat, though there is little liability of this, because the weight of the bow rests on the rudder. The main-wheel shaft K is provided with a central crank, *k*, to which one end of a pitman, L, is connected, the other end of said pitman being connected with the walking-beam M. The opposite end of the walking-beam is bifurcated and connected by two pitmen, *l*, to the cross-head G in a revolving collar joint, *n*. This collar *n* has a trunnion at its sides, upon which the pitmen *l* are pivoted, to accommodate the circular motion of the walking-beam. The collar *n* fits the hub N of the cross-head G between two shoulders thereof, communicating vertical motion thereto from the walking-beam, thus applying power to the cranks of wheel C. At the same time said cross-head is free to rotate in said collar, to accommodate the various angular directions given to the wheel C, whereby said wheel acts as a rudder. Thus the motion of the walking-beam may be applied with equal ease to said rudder-wheel at any angle of inclination from the working-plane of the beam.

The rudder is guided by a common tiller-wheel, O, and winding chain or rope P, connected with the rudder-frame at the ends of the cross-bar *g*, and guided by pulleys *p*.

Power may be applied to the walking-beam by an engine connected at Q, or by any other usual means. The walking-beam is journaled in bearings, as usual, in the tops of posts R, permanently fixed to the deck, and the upper yoke, I, is braced to said posts, and also braced forward at *r* to the deck.

It is thought that a boat built on this principle will not sink so deep into the water when under headway as when at rest, and that its frontal resistance will be less, since it advances by merely pulling the water behind it, while common boats have to push against the water. There may be any suitable number of floating-wheels, and they may be made of any other suitable contour or external shape than that described.

To produce the best result, the paddles are

lune-shaped, widest at the circumference of each wheel, and divided centrally by the flange *b*, the flange acting as a keel to each wheel.

S represents a bulwark around the circular hole in the deck occupied by the rudder-wheel.

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

1. The combination, with the deck A, having a circular hole in it, of the yoke I, spanning said hole and secured to the deck, and the yoke *i*, also secured to the deck and spanning the hole at right angles to yoke I, the yoke *i* being some distance below yoke I, and a vertical spindle, J, of a wheel, C, journaled in said yokes, whereby the said deck is partly supported by the said wheel, and the stem of the wheel is supported at its upper and lower ends in a fixed position relative to the deck.

2. The combination, with the wheel C and the spindle J, of the hood B, covering the wheel and supported by said spindle, to revolve with the wheel thereon, as shown and described.

3. The combination, with a floating paddle-wheel provided with cranks and journaled in a frame having a vertical spindle, of a deck, a walking-beam journaled in a post or bearings mounted thereon, arched yokes secured to the deck and having bearings for said vertical spindle and the attached wheel-frame to rotate in, vertical guide-rods secured to

said frame, a cross-head mounted to reciprocate on said rods, pitmen connecting the cross-head with the aforesaid cranks, and means for connecting said cross-head with said walking-beam, as shown and described.

4. The combination, with a cranked paddle-wheel having a vertically-reciprocating cross-head connected with said cranks, all pivoted to rotate horizontally, of a walking-beam connection consisting of a collar having trunnions on it, journaled between shoulders of said cross-head, and two pitmen, each hung at one end upon the walking-beam, and at the other end to one of said trunnions, as shown and described.

5. The combination, with three floating cranked paddle-wheels, one of which is a rudder, and a deck supported on the journals thereof, of a post mounted on the deck, a walking-beam journaled in said post, a pitman connecting the crank of two of the wheels with the walking-beam, and a swiveling connection between the other end of said beam and the cranks of the rudder-wheel, substantially as and for the purpose specified.

NICOLAI PETERSEN.

Witnesses:

W. D. MIDDLETON,
WM. MICHAELIS.