

(No Model.)

N. PELLETIER.
PADDLE WHEEL FOR BOATS.

No. 515,883.

Patented Mar. 6, 1894.

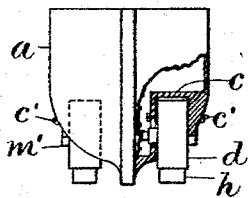


Fig. 1.

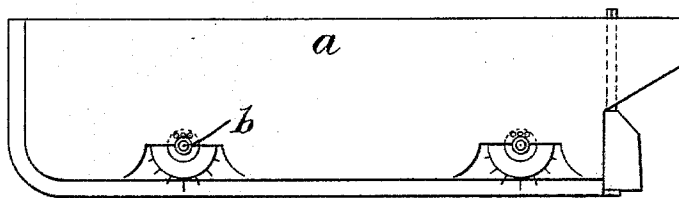


Fig. 2.

Fig. 3.

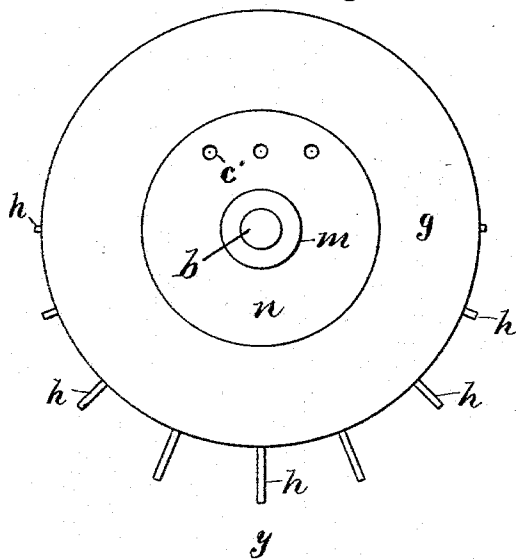


Fig. 4.

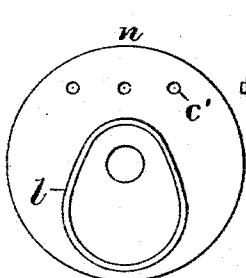
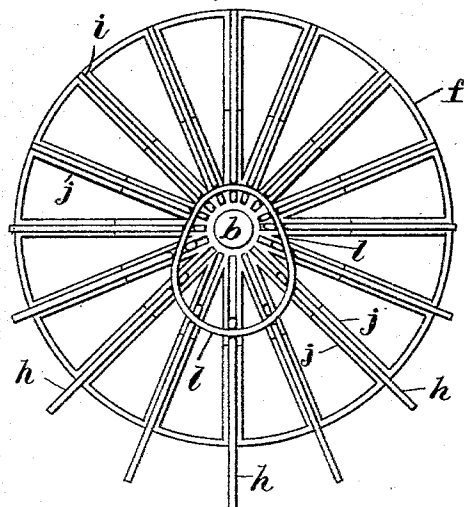


Fig. 5.

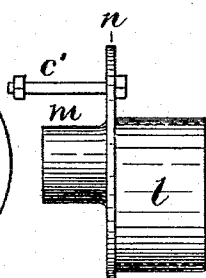


Fig. 6.

Fig. 7.

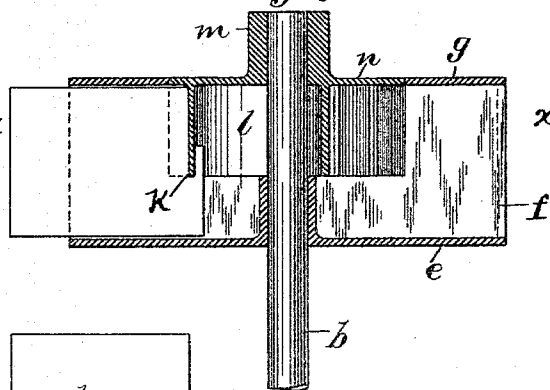
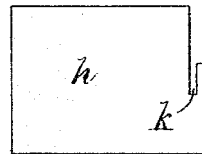


Fig. 8.



Attest:
Edw. C. Kinsey
W. Batson.

Inventor.
Napoleon Pelletier
per Crane & Miller, Atty.

UNITED STATES PATENT OFFICE.

NAPOLEON PELLETIER, OF BROOKLYN, NEW YORK.

PADDLE-WHEEL FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 515,883, dated March 6, 1894.

Application filed July 28, 1893. Serial No. 481,702. (No model.)

To all whom it may concern:

Be it known that I, NAPOLEON PELLETIER, a subject of the Queen of Great Britain, residing at the city of Brooklyn, in Kings county, State of New York, have invented certain new and useful Improvements in Paddle-Wheels for Boats, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to that class of paddle wheels in which the floats are projected upon one side only of a cylindrical drum; thus avoiding the formation of any back water, and permitting the upper half of the wheel to be inclosed or recessed into the side of the boat.

In the annexed drawings, Figure 1 shows the bow of the boat with one side cut away to expose the casing for the wheel. Fig. 2 is a side elevation of the same. Fig. 3 is an elevation of the wheel and its in-board bearing upon an enlarged scale. Fig. 4 is a section of the same on line *x x* in Fig. 7. Fig. 5 is a view of the inner side of the in-board bearing with the attached cam. Fig. 6 is an edge view of the same, and Fig. 7 is a section of the wheel and out-board bearing on line *y y* in Fig. 3. Fig. 8 is a detached view of one of the paddles.

The boat *a* is shown provided with two paddle-wheel shafts *b* surrounded at their outer ends by semi-cylindrical boxes *c* adapted to inclose the upper half of the wheel *d*.

In Fig. 1, wheels are shown at the opposite ends of the shaft, and the shaft would be rotated by any suitable means. The shell of the wheel, of cylindrical form, consists of a disk *e* with rim *f*, and an outer ring *g* projected inward from the rim. Such parts constitute a cylindrical shell or casing in which the paddles or blades are fitted movably. Radial blades *h* are fitted to slots *i* in the periphery of the rim and guides *j* are extended from the rim to the shaft *b* to guide the blades radially. Each blade or paddle is notched upon one edge, as at *k* in Fig. 8, and a cam *l* is attached to an in-board bearing *m* which has a circular plate *n* fitted within the ring *g*. The in-board bearing *m* is held stationary at the inner side, and an outboard bearing *m'* at the outer side of the boxes *c* by bolts *c'*, and the cam *l* is thus held in a fixed relation about

the shaft *b*. The cam is of egg-shape and formed of a flange projected inward from the plate *n*, to enter the notch *k* in each of the paddles. The cam is so arranged as to force the blade at the lower side of the wheel fully outward and to hold the blades which are intermediate to the bottom and center of the wheel in an intermediate position. The upper side of the cam is substantially concentric with the shaft *b* and thus holds the outer ends of the paddles flush with the rim *f* upon the upper side of the latter. The rim is fitted to turn snugly within the box *c* above the center line and the water at the side of the boat is thus excluded from contact with the upper half of the wheel.

Two paddle shafts are shown in Fig. 2, and any number of such shafts with a paddle wheel at each end may be applied to the same boat. By increasing the number of the wheels, their diameter may be reduced, and the size of the boxes *c* may thus be diminished; as well as the projection of the paddle wheels into the water and their consequent interference with the movement of the boat.

Heretofore, eccentrics have been used to actuate paddles in a paddle wheel; but I prefer the cam shown in the drawings, as it enables me to produce precisely the desired movement of the paddles. It will be understood that the disk *e*, the rim *f* and the ring *g* are secured rigidly together with the guides *j* and rotate continuously with the shaft *b*; and the paddles are thus projected in turn from the bottom of the wheel and are retracted without lifting the water above the top. It will also be understood that a fresh portion of each shell, with the retracted paddles, is constantly entering the semi-cylindrical box, and that a new portion of the wheel is, by its rotation, thus protected from the water while the paddles are inoperative.

I am aware that a pneumatic jet has been arranged movably in a semi-cylindrical box upon the side of a vessel, but in such case the axis of the semi-cylindrical box is made vertical to vary the horizontal angle of the jet. I therefore disclaim such construction, as the semi-cylindrical boxes employed in my paddle wheels are formed with a horizontal axis coincident with the transverse shaft *b*.

Having thus set forth the invention, what

I claim herein, and desire to secure by Letters Patent, is—

5 The combination, with the boat having semi-cylindrical boxes *c*, of the rotary shaft *b* extended horizontally across the boat into the boxes, the rotary paddle wheels having each a cylindrical shell attached to the said shaft with the upper half inclosed in one of said
10 boxes, the shell of each paddle wheel comprising the disk *e*, the rim *f*, the ring *g* and guides *j* as set forth, and the shell inclosing the paddles *h* fitted to the guides *j* and pro-

vided each with the notch *k*, and the boxes provided with the stationary bearings *m* having each the cam *l* fitted to the notches *k*, substantially as herein set forth. 15

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

NAPOLEON PELLETIER.

Witnesses:

THOS. S. CRANE,
J. FRANK MASE.