

*T. W. Reiley,
Propeller.*

N^o 2,430.

Patented Jan. 24, 1842.

Fig. 2.

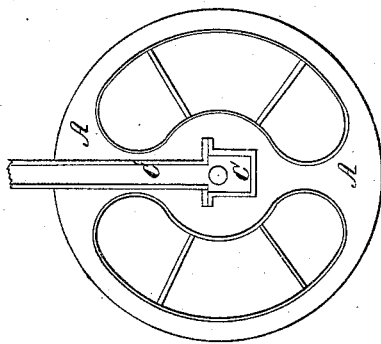


Fig. 3.

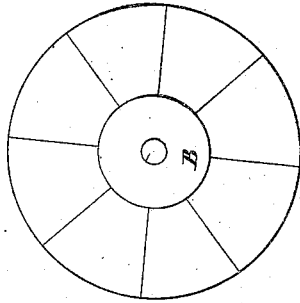


Fig. 1. Sectional View

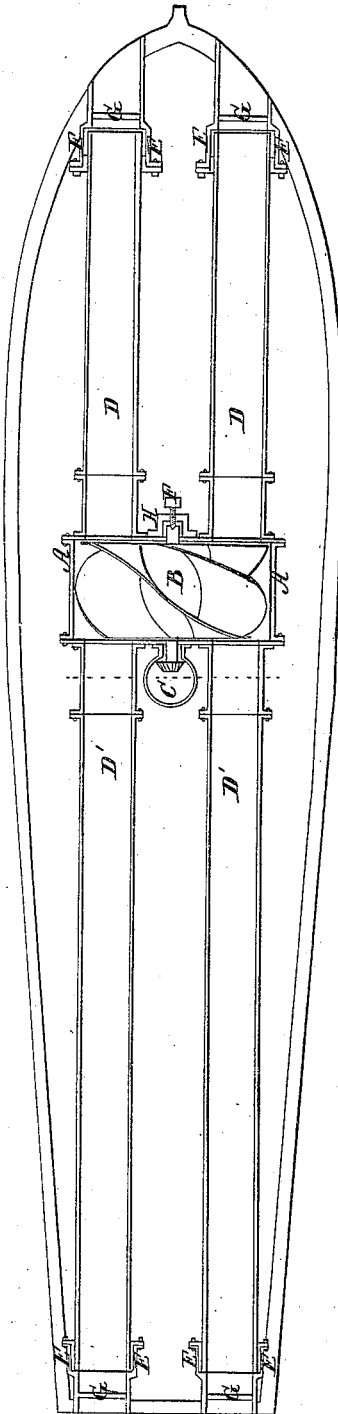
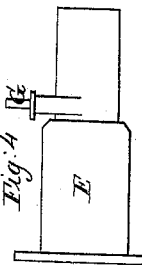


Fig. 4



UNITED STATES PATENT OFFICE.

THOMAS W. REILEY, OF McMINN COUNTY, TENNESSEE.

IMPROVEMENT IN THE MANNER OF PROPELLING BOATS BY MEANS OF JETS OF WATER.

Specification forming part of Letters Patent No. 2,430, dated January 24, 1842.

To all whom it may concern:

Be it known that I, THOMAS W. REILEY, of the county of McMinn, State of Tennessee, have invented a new and Improved Mode of Propelling Steamboats; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a horizontal section through the boat, tubes, and wheel-chamber. Fig. 2 is a cross-section of the tubes on the line *a b* of Fig. 1; Fig. 3, front view of the wheel; Fig. 4, side view of the stuffing-box.

The same letters of reference are used in all the figures.

A represents the wheel-chamber; B, wheel; C, tube through which the wheel is connected with the motive power; D D, tubes connected with the chamber A and opening at the bow; D' D', tubes connected with chamber A and opening at the stern; E E, stuffing-boxes; F, screw-pivot on which the wheel turns; G, sliding valve.

In the interior of the boat I construct a circular chamber A, of sufficient capacity to receive the propelling-wheel B. This chamber is so situated as that the shaft of the wheel shall be parallel with and directly over the keel of the boat. On each side of this chamber are two openings A' A', Fig. 2, made concentric with the periphery of the wheel, as wide as the paddles are long, so as to deliver the water onto or from the wheel freely. These openings may be braced by iron bars *a' a'*, if found necessary. Around each one of these openings is fitted a tube of the same form and firmly secured to the face-plate of the chamber by flanges cast thereon in the usual mode of connecting iron pipes. Two of these tubes D D extend from the front of the chamber to the bow of the boat, and two D' D' from the rear of the chamber to the stern, where they enter stuffing-boxes hereinafter described. These tubes may be made in one or more pieces, as convenience requires. At the points where the tubes reach the bow and stern of the vessel they enter stuffing-boxes E, firmly fixed to the holes in the vessel, through which the water passes, and so constructed as to admit of a tight packing around the tubes, and at the same time allow them free action for lengthening and contracting by any change of temperature without straining the vessel or admitting a leakage at the joint. These stuffing-boxes have

a tube cast with them, which passes through the side of the vessel, in which there is a slide-valve G', tightly packed, that can be closed, thus shutting off all communication with the exterior, while the water inside can be pumped out and the wheel repaired when the vessel is afloat. These tubes can also be used, by discharging the water in them, as buoys to sustain the vessel should it receive any injury to cause it to leak.

The wheel B is made with spiral paddles in any of the usual forms of such wheels, the center or hub being of a conical form with the base toward the bow of the boat. The journals turn in bearings of the usual construction. There is a cap H over the end of the shaft next the bow fitted water-tight. Through this cap, opposite the end of the shaft, there is a screw F, past which enters a concavity on the end of the journal and sustains the lateral pressure of the wheel. The shaft is inclosed at the other end by a pipe C, which has an enlargement sufficient to hold the bevel-gearing, which moves the wheel. Onto this pipe is screwed another C' in an upright position, which surrounds a vertical shaft attached to the motive power. This pipe extends up above the water-line, so that the water that leaks in at the journals can have no communication with the boat. It will thus be seen that I obviate the necessity of packing round the journals and save the friction caused thereby.

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

1. The combination of a chamber formed within the body of the boat, in which a wheel with spiral vanes revolves at right angles to its progression, with tubes opening into it from the bow and stern, constructed as herein described.

2. The employment of the stuffing-boxes E to admit of the expansion and contraction of the tubes D and D', in the manner above described.

3. The employment of cut-off valves in the end tubes beyond the stuffing-boxes, as herein described, so that the water can be shut off for the purpose of repairing the tubes, wheel, &c., and by means of which the tubes can be used as buoys.

THOS. W. REILEY.

Witnesses:

WM. GREENOUGH,
J. J. GREENOUGH.