R. F. Loper,

Screw Propeller.

No. 3,786. Patented Oct. 9, 1844.

Fig. 2.*

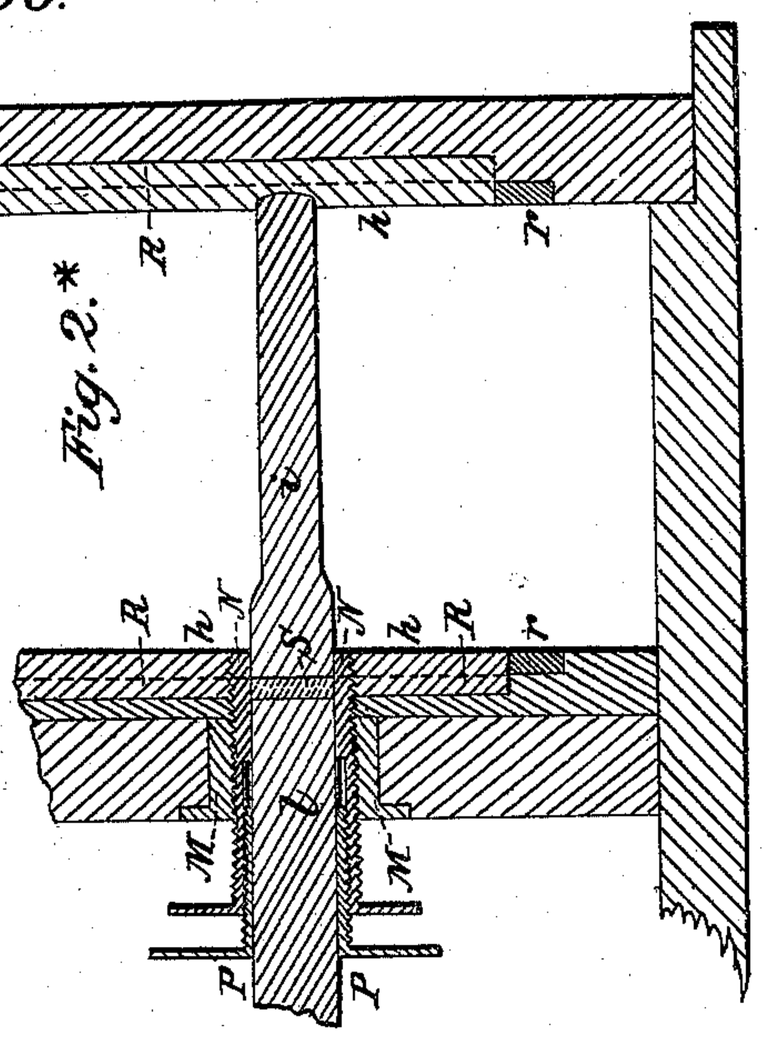


Fig. 2.

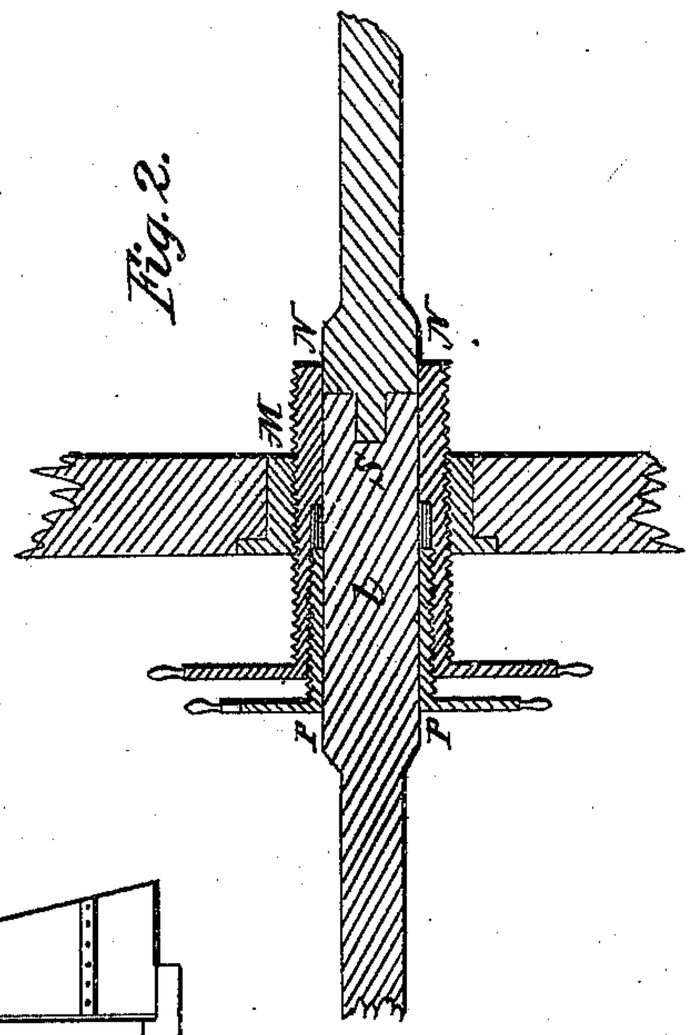
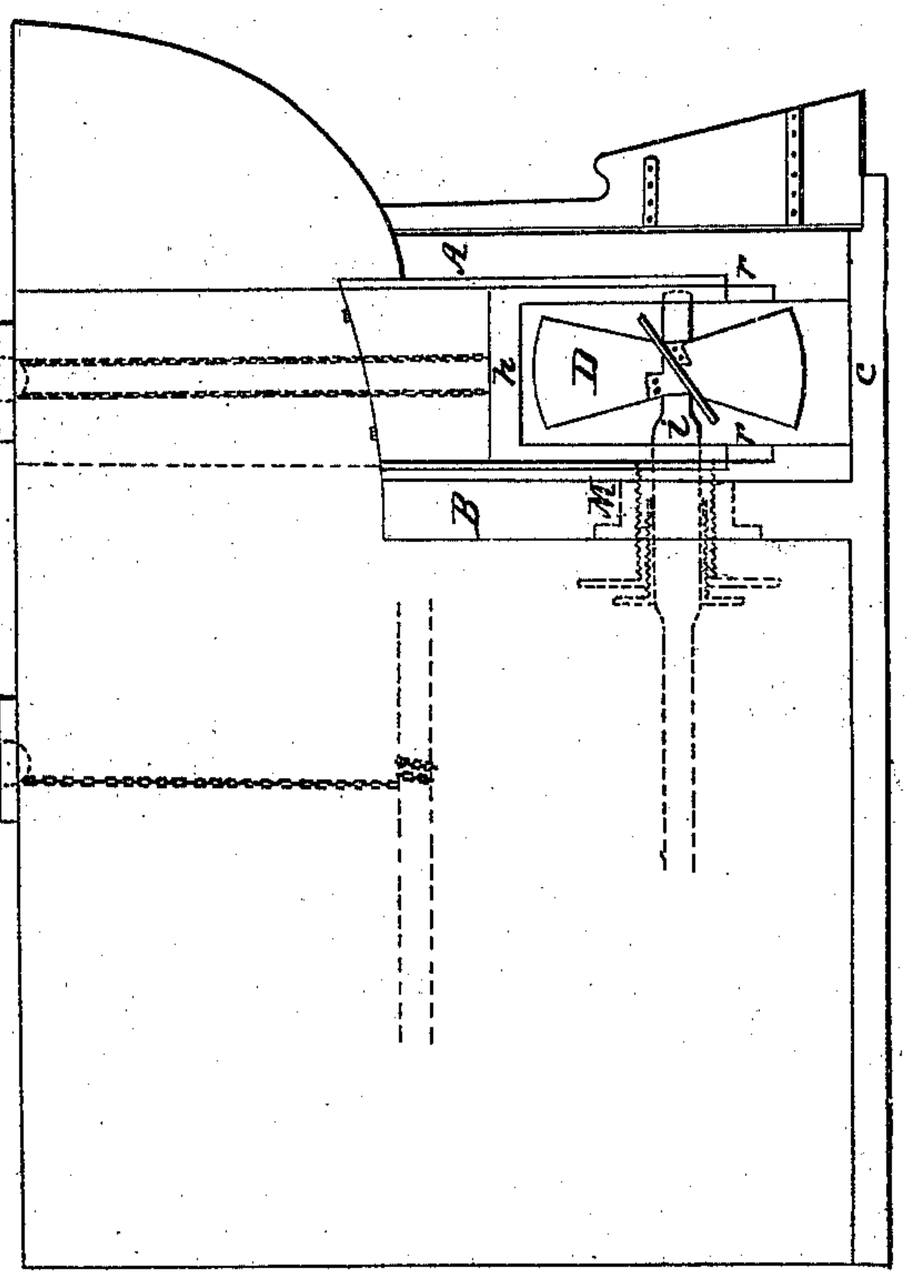


Fig. 1.



Witnesses.
John Burns.
B. J. McMurtrie.

Inventor:
R. F. Loper.

UNITED STATES PATENT OFFICE.

RICHARD F. LOPER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE MODE OF COUPLING THE SHAFTS OF SUBMERGED PROPELLERS FOR STEAMBOATS AND OTHER VESSELS.

Specification forming part of Letters Patent No. **3,786,** dated October 9, 1844.

To all whom it may concern:

Be it known that I, RICHARD F. LOPER, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Construction of Stuffing and Coupling Boxes for Disjointed Shafts of Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the drawings herewith presented, in which—

Figure 1 is a side elevation of the method of connecting the wheel or propeller shaft to the main or engine shaft, or of unconnecting the same when the propeller is to be raised. Fig. 2 is an enlarged view of the coupling of the wheel-shaft to the shaft of the engine.

The nature of my invention consists in the method of constructing the cylindrical tube N so as to form a part of the stuffing-box P and at the same time act as a coupling-box for securing the joint of the shaft. This stuffing and coupling box may be constructed so as to slide out and in on the shaft by means of a male screw cut on its outer circumference, working in a female screw running through a cylinder fastened in the stern-post; or it may be made to slide out or in simply by means of a lever, in which case no screw would be used, as above; but it would slide in a socket inserted in the stern-post, and it might be made either square or round on the surface adjoining the socket; but I would strongly recommend the screw plan as the best.

Fig. 1 represents a sectional side view of the stern of a vessel, in which the propeller is placed between the proper stern-post B and a false or preventer stern-post A, which is behind and parallel to the post B, the keel C extending out far enough to mortise the lower end of post A to.

Between the two stern-posts A and B the wheel D is placed and is supported in a sliding frame *h*, made of any suitable material, which frame rests on the blocks *r r*. The sliding frame *h* is made of two parallel uprights, joined at the top by a straight or arched cross-piece, in the center of which is a sheave or pulley K, through which the tackling reeves, used for hoisting and lowering the frame. This sliding frame has a tongue on its surfaces nearest the two posts A and B, which tongue slides in a corresponding groove in the metallic plates which line the surfaces of the posts A and B next the frame. The two side pieces of the frame have the bearings of the shaft *i* of the wheel D in them, the shaft entering through on the side next the main stern-post B. The tongue S of the shaft *i*, Fig. 2*, corresponds with the tongue R of the frame *h*, and, traversing in the groove in the stern-post, prevents the propeller from revolving when in the act of raising or lowering it. The shaft *l*, Fig. 2, projects far enough to couple with the propeller-shaft, it being forked to receive it, as is more clearly shown in the section Fig. 2, which permits them to be coupled and uncoupled at pleasure.

In the stern-post B there is secured a metal ring or box M. On the inside of this ring there is cut a female screw, into which the coupling-tube N screws. This tube N has a smooth surface for about one-third of its length on its inside circumference, which plane surface is made to correspond to the size of the shaft on which it traverses. In the opposite or inboard end there is a worm cut for the reception of the cylindrical tube *p*, and between this worm and the aforesaid smooth surface there is a chamber for the reception of the packing, which is compressed around the shaft by means of screwing up the tube *p*. These stuffing and coupling boxes are turned by means of wheels resembling the steering-wheels of vessels, and everything done on the inside of the vessel. When the shaft is in motion, the cylinders may be prevented from revolving by means of movable pins running through their spokes into sockets in the stern-post, or by any other suitable means.

Having thus fully described my improvements, what I claim therein, and what I desire to secure by Letters Patent, is—

The afore-described mode of employing the cylindrical tube N, for the double purpose of a coupling-box and a stuffing-box, by combining it with the coupled shaft and with the other portions of the stuffing-box, by which arrangement much room is saved and great simplicity attained, all as herein described.

September 28, 1844.

R. F. LOPER.

Witnesses:
JOHN BINNS,
B. T. MCMURTIN.