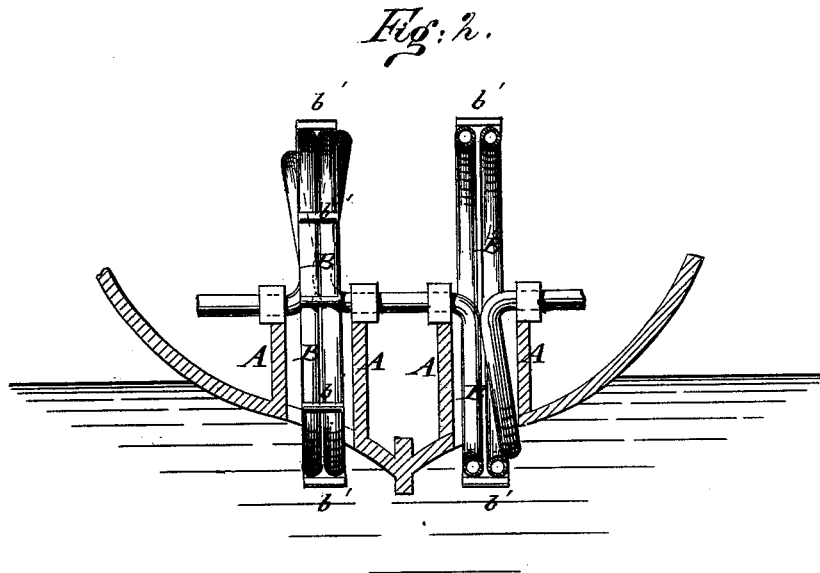
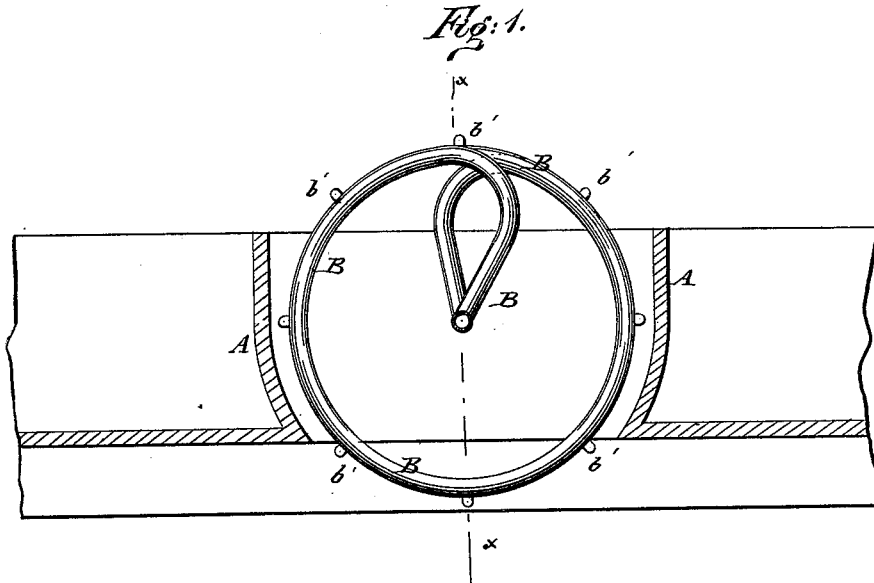


P. S. FORBES.
Coiled Tube Rotary Condenser.

No. 198,288.

Patented Dec. 18, 1877.



WITNESSES:
Edgar Tate
J. H. Scarborough.

INVENTOR:
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UNITED STATES PATENT OFFICE.

PAUL S. FORBES, OF NEW YORK, N. Y.

IMPROVEMENT IN COILED-TUBE ROTARY CONDENSERS.

Specification forming part of Letters Patent No. **198,288**, dated December 18, 1877; application filed November 23, 1877.

To all whom it may concern:

Be it known that I, PAUL S. FORBES, of the city, county, and State of New York, have invented a new and useful Improvement in Coiled-Tube or Wheel Rotary Condenser, of which the following is a specification:

Figure 1 is a side view of my improved device. Fig. 2 is a front and sectional view of the same, the section being taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for condensing the exhaust-steam of the engines of steam-launches, steam-yachts, and other vessels, which shall be simple in construction, inexpensive in its application, and effective in use.

The invention consists in an improved rotary condenser, made of a tube coiled into wheel form, and having its ends projecting at the centers of its opposite sides, to adapt it to be placed and revolved in a well in a vessel, for condensing the exhaust-steam of the engine, as hereinafter fully described.

A represents a well, similar to a center-board well, except that it is placed at the side of the keel. B is a wheel, formed of one or more coils of a tube, the ends of which project at the centers of the opposite sides, to serve as

journals for the said wheel, and which revolve in bearings in the sides of the well A, one of said ends receiving the steam, and the other discharging the water of condensation.

To the outer surface of the wheel B are attached cross-bars *b'*, to keep the said coils in place, and which may also serve as paddles for revolving said wheel by the action of the water as the vessel moves forward; or, if desired, the wheel B may be revolved by power applied to its journals from an engine.

By this construction the wheel B, being constantly revolved in cold water, will be kept cool, so that the steam will be condensed rapidly and thoroughly.

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

An improved rotary condenser, made of a tube coiled into wheel form, and having its ends projecting at the centers of its opposite sides, to adapt it to be placed and revolved in a well in a vessel, for condensing the exhaust-steam of the engine, substantially as herein shown and described.

PAUL S. FORBES.

Witnesses:

JAMES T. GRAHAM,
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