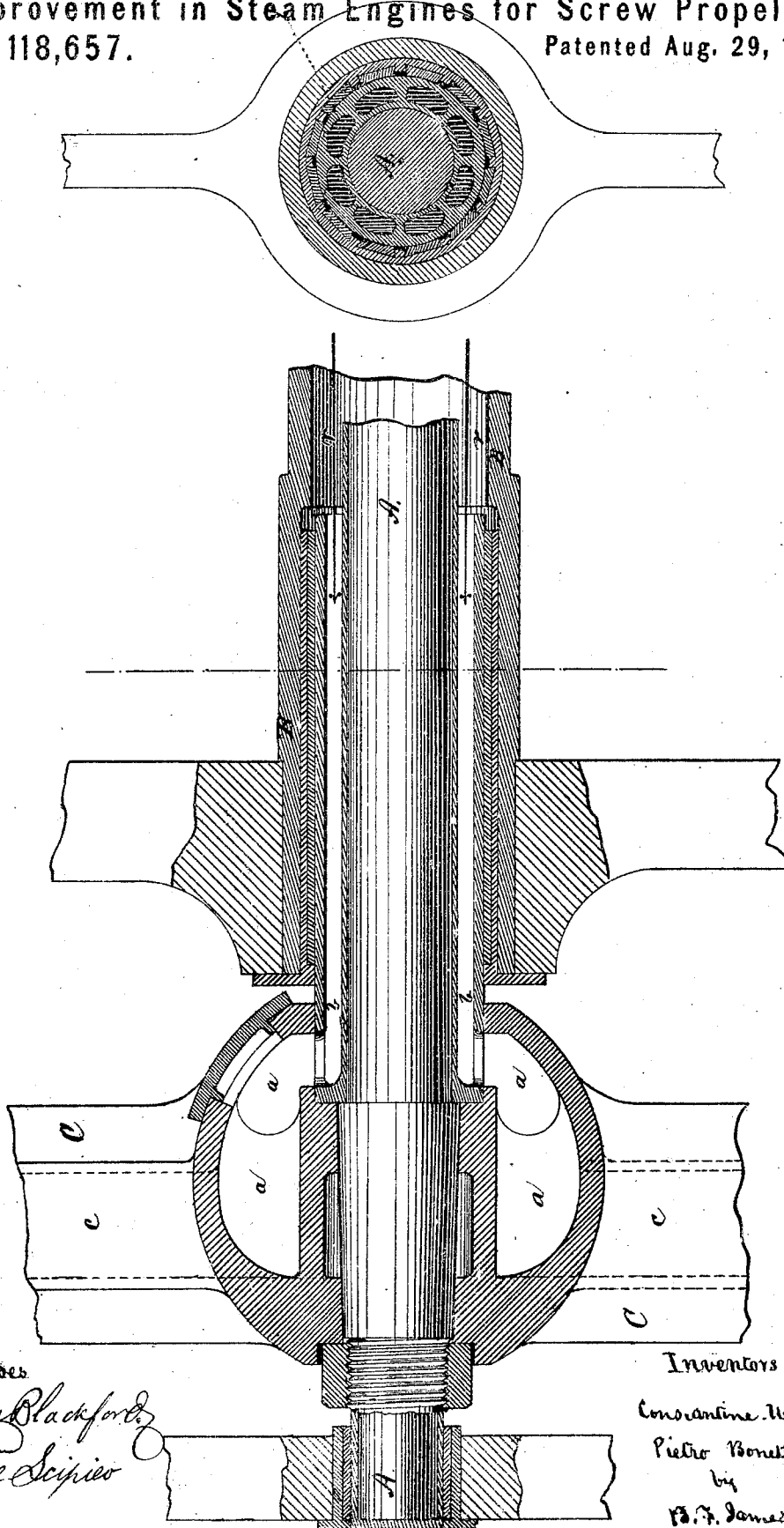


**CONSTANTINE WEGSCHAIDER & PIETRO BONETTI.**  
**Improvement in Steam Engines for Screw Propellers.**  
**No. 118,657.**

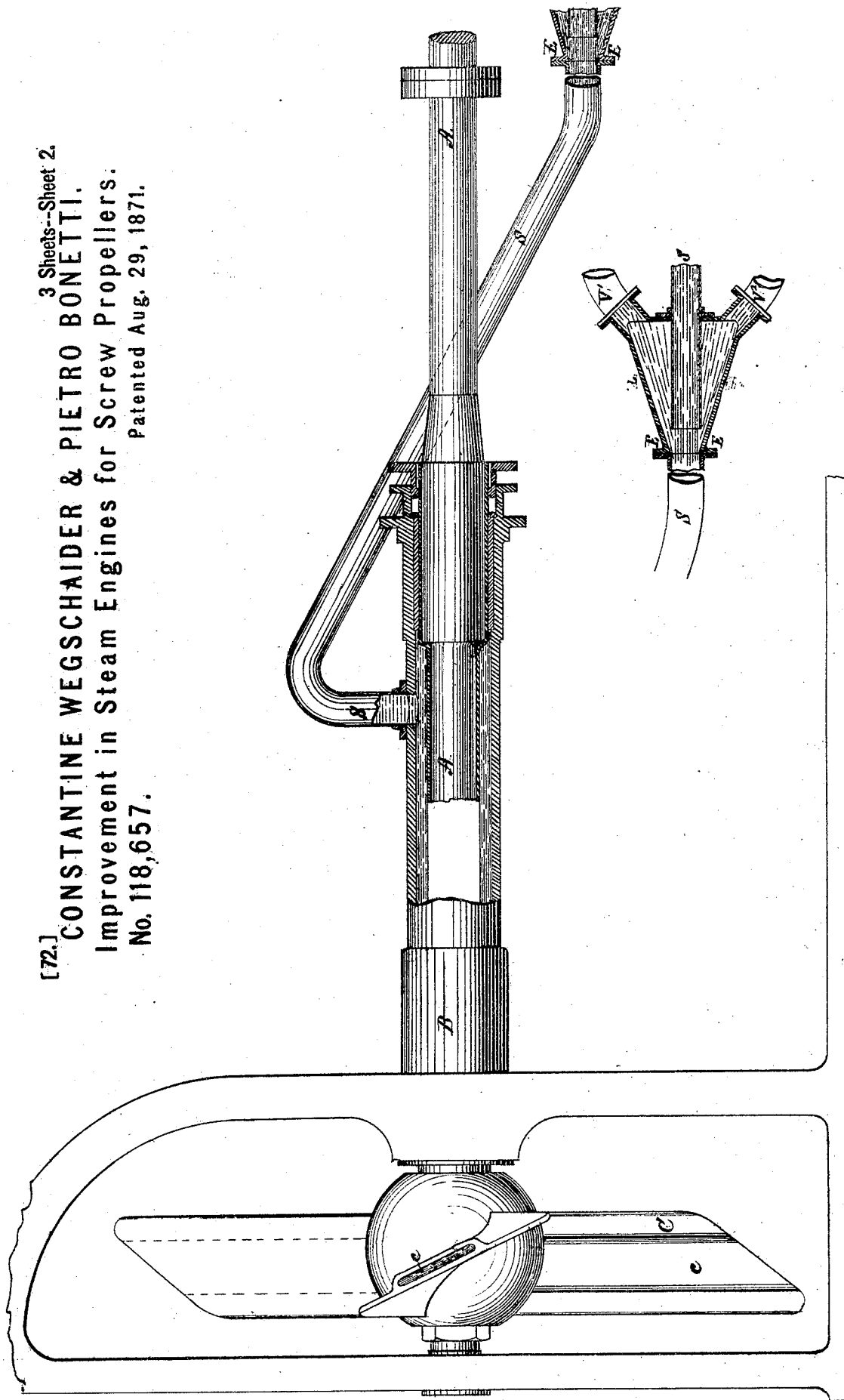
Patented Aug. 29, 1871.

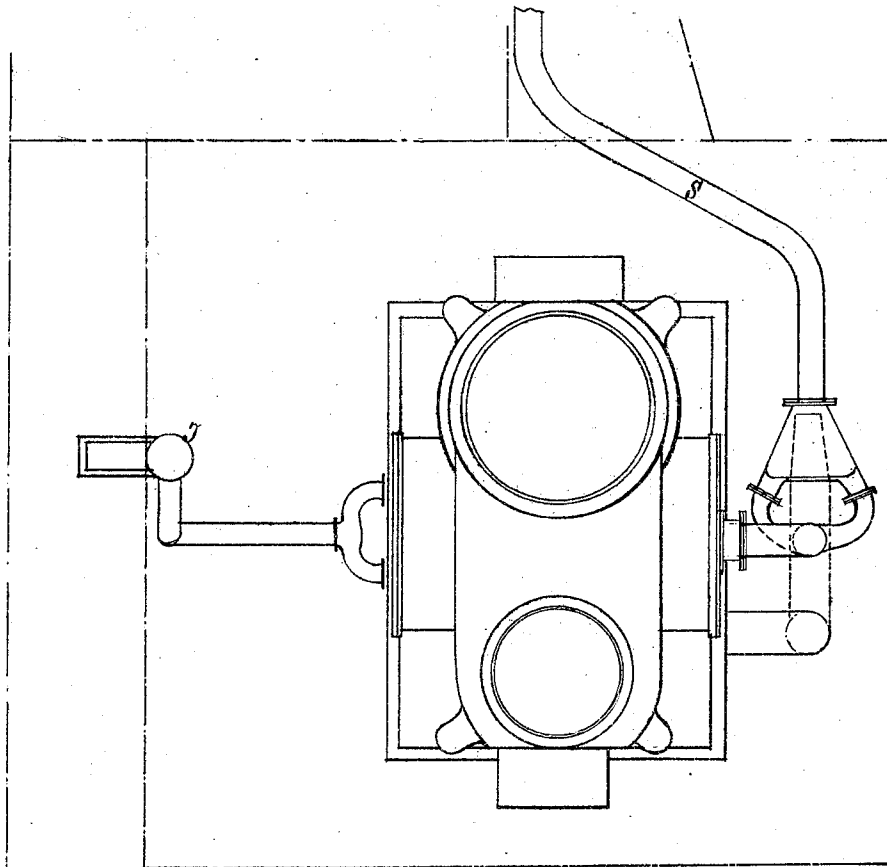
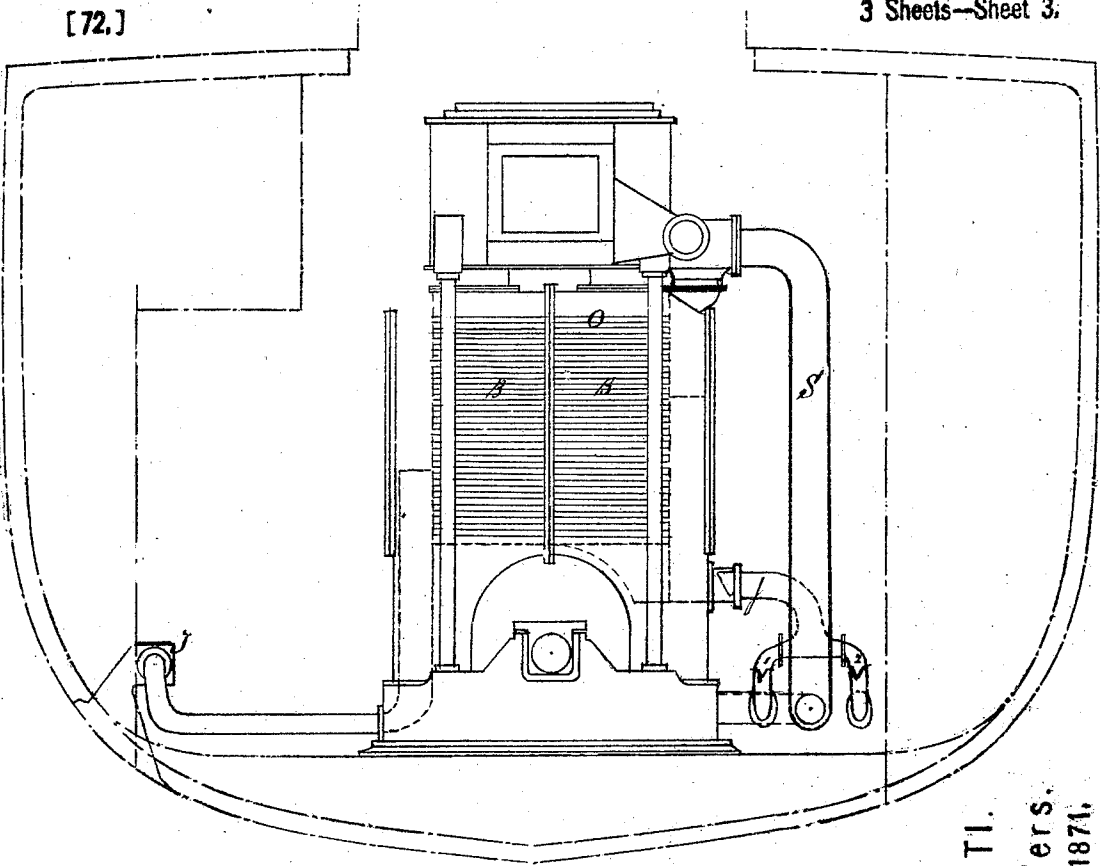


Witnesses  
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# UNITED STATES PATENT OFFICE.

COSTANTIN WEGSCHAIDER AND PIETRO BONETTI, OF TRIESTE, AUSTRIA.

## IMPROVEMENT IN STEAM-ENGINES FOR SCREW-PROPELLER VESSELS.

Specification forming part of Letters Patent No. 118,657, dated August 29, 1871.

*To all whom it may concern:*

Be it known that we, COSTANTIN WEGSCHAIDER and PIETRO BONETTI, of Trieste, Empire of Austria, have invented certain Improvements in the Steam-Engines of Screw-Propelled Vessels, of which the following is a specification:

The first part of our invention relates to the utilization of the centrifugal force produced by and inherent to a ship's screw or propeller when in motion, for the purpose of producing a current or flow of cold water through the tubes of the superficial condenser, and by which the pumps and other apparatus now in use for that purpose are wholly avoided. This we effect, first, by means of water-channels extending from the hollow box of the screw or propeller along its blades outward; and secondly, by means of other channels passing from the same box, along the shaft, through the stern-tube, and connecting there with the cold-water exhaust-tube of the condenser.

The second part of our invention relates to the utilization of the same centrifugal force for the purpose of exhausting the condenser of the hot water by connecting the cold exhaust-tube and the channels in the casing of the shaft at the stern-tube, not by a simple tube, but by an apparatus similar to the sucking-jet pump, for the purpose of exhausting the condenser of the hot water, and thus avoiding the necessity of the usual air-pump.

Plan I is a partial section of propeller, stern-tube, and shaft.

Plan II shows the entire apparatus, namely, propeller, stern-tube, shaft, and exhaustor Z.

Plan III is the elevation and plan of an ordinary compound engine, showing the application of the exhaustor Z.

Plan I: A A is the shaft of the propeller. B B is the stern-tube, of the usual form and construction. C C, screw or propeller. *a a* is a chamber added to the ordinary box of the propeller.

*c c* are tubes or channels cast upon the non-acting surface of the propeller-blades, through which the water from the chamber *a a* is expelled. *b b* are water-channels rotating with the shaft, and connecting the usual water-filled space *r r* with the chamber *a a*.

Plan II: Z is the apparatus connecting the condenser with the suction-tube S, which supplies the place of the ordinary air-pump, and perfects the vacuum by removing whatever water has not been returned to the boiler by the feed-pump, as also any uncondensed steam.

Plan III: This plan, in which all parts of the engine not necessary to the present purpose are omitted, exhibits the connection of Z with the condenser. O is the superficial condenser, in which B B represent the condensing-tubes, into which, in our invention, the cold water is drawn by the centrifugal force of the propeller. *p* is the exhausting-tube, dividing into *p<sup>1</sup>* *p<sup>2</sup>*, which unite with or issue into the suction-pipe S at the point E E in Plan II.

We claim as our invention—

1. The method herein described of utilizing the centrifugal force of the propeller, in the manner and for the purpose herein set forth.

2. The water-channels *c c*, which pass from the box of the screw outwardly along its blades.

3. The channels *b b*, cast in the shaft-casing where it passes the stern-tube.

4. The combination of the channels *c c*, the chamber *a a*, channels *b b*, tube S S, and exhaustor Z, substantially as and for the purposes hereinbefore set forth.

Trieste, June 9, 1871.

COSTANTIN WEGSCHAIDER.  
PIETRO BONETTI.

Witnesses:

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