J. LYALL.
COVER OR LINER FOR SCREW PROPELLER SHAFTS.
(Application filed Oct. 7, 1899.)

WITNESSES
John Lyall
INVENTOR
By HIS ATTYS
Howard and Howard

THE NOYES PETERS CO., PRINTED IN NEW YORK, U. S. A.
I. ?

UNITED STATES PATENT OFFICE.

JOHN LYALL, OF GLASGOW, SCOTLAND.

COVER OR LINER FOR SCREW-PROPELLE R SHAFTS.

SPECIFICATION forming part of Letters Patent No. 839,071, dated December 12, 1899.

Application filed October 7, 1899. Serial No. 735,022. (No model.)

To all whom it may concern:

Be it known that I, JOHN LYALL, a subject of the Queen of Great Britain and Ireland, residing at Glasgow, Scotland, have invented certain new and useful Improvements in Covers or Liners for Screw-Propeller Shafts, for which I applied for British Letters Patent on the 29th of March, 1899, No. 6,763, of which the following is a specification.

My said invention has for its object to improve the construction of covers or liners for screw-propeller shafts.

In screw-propeller shafts as hitherto constructed what is known as the “tail-shaft” is fitted with a cover or liner of gun-metal on the parts which turn in the inner and outer bearings in the stern-tube when the shaft is in its place. The part of the tail-shaft between these two liners is either left uncovered or fitted with another liner which is brazed or otherwise jointed to the other two liners. It has been found by experience that any water in the stern-tube acts on the middle part of the tail-shaft either directly when that part is left uncovered or through time through the joints of the liners which open owing to unequal expansion of the metal, the water corroding the shaft and, if not noticed in time, causing serious accidents. To remedy this defect, I fit the tail-shaft with a liner, by preference of gun-metal, extending the whole length of the stern-tube. This liner is by preference cast with its middle part thinner than the two end parts, the middle part being also made of a corrugated or similar form.

In order that my said invention and the manner of performing the same may be properly understood, I hereunto append a sheet of explanatory drawings, to be hereinafter referred to in describing my improvements.

Figure 1 on the drawings is an elevation of a portion of a tail-shaft as fitted with my improved liner, the liner being in section; and Fig. 2 is a longitudinal section of a stern-tube, showing the tail-shaft and liner in elevation, this figure being drawn to a smaller scale than Fig. 1.

In the drawings the same reference-letters are used to mark the same or like parts wherever they are repeated.

As shown in the drawings, the tail-shaft A in the stern-tube B is fitted with a liner, by preference of gun-metal, extending the whole length of the stern-tube B. This liner is by preference cast with its middle part C thinner than its two end parts D E, which turn in the inner and outer bearings F G in the stern-tube B, so that the middle part C does not bear on the shaft A. The middle part C of the liner is also made with corrugations, so that when heated and being shrunk in position on the shaft A and also afterward when the shaft is working the corrugations allow for expansion or contraction of the two end parts D E of the liner, thus preventing the possibility of the liner becoming fractured and permitting the water to get access to and corrode the shaft A.

The shape and number of the corrugations in the middle part C may be varied as may be found most convenient in practice.

What I claim as my invention is—

A cover or liner for screw-propeller shafts made in one piece and extending the whole length of the stern-tube the middle part between the two end parts being of a corrugated form substantially as and for the purposes herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN LYALL.

Witnesses:

EDMUND HUNT,

DAVID FERGUSON.