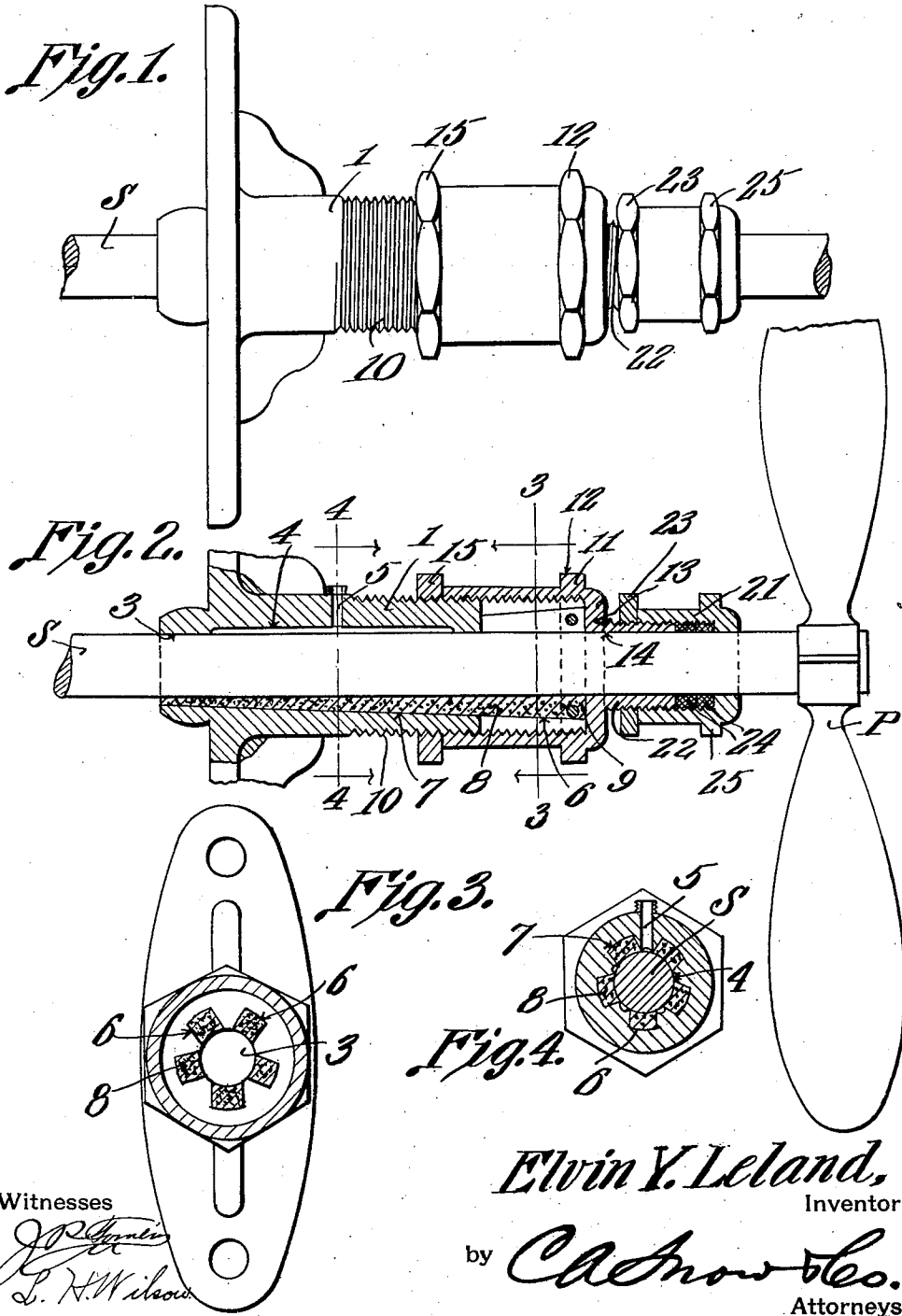


E. Y. LELAND.
PROPELLER SHAFT BEARING.
APPLICATION FILED MAR. 16, 1911.

1,035,205.

Patented Aug. 13, 1912.



Witnesses

J. P. [Signature]
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UNITED STATES PATENT OFFICE.

ELVIN Y. LELAND, OF BAR HARBOR, MAINE.

PROPELLER-SHAFT BEARING.

1,035,205.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed March 16, 1911. Serial No. 614,896.

To all whom it may concern.

Be it known that I, ELVIN Y. LELAND, a citizen of the United States, residing at Bar Harbor, in the county of Hancock and State of Maine, have invented a new and useful Propeller-Shaft Bearing, of which the following is a specification.

This invention relates to journal boxes, and more especially to those of that type which employ wear compensating devices; and the object of the same is to produce an adjustable bearing for propeller shafts. It is well known that these shafts find their rearmost bearing in the hull just where they emerge therefrom and therefore are extremely likely to leak if they become loose in their bearing, and to play, rattle, or "whip" with considerable noise and vibration to the injury of the hull and the machinery and resulting in loss of speed and power. My present invention is designed to provide a bearing to be applied to the propeller shaft at this point, and so constructed that wear thereon can be taken up quickly by running the vessel out of the water.

The following specification describes my invention in detail, reference being had to the accompanying drawings wherein:—

Figure 1 is a side elevation of this bearing complete. Fig. 2 is a central longitudinal sectional view thereof, the propeller in this view being diagrammatically indicated. Figs. 3 and 4 are cross sections on the lines 3—3 and 4—4 of Fig. 2.

In the drawings the letter S designates a shaft, usually of steel, on which is mounted the propeller here indicated by the letter P; and it is well known that this shaft leads from the engine along the keel and out the rear extremity of the hull of the vessel in which it is mounted; and, as its rear or propeller-carrying extremity is free and cannot well be supported, a long and strong bearing is located within the hull as far to the rear as possible. This bearing it is the purpose of the present invention to improve and provide for the taking up of wear therein.

Coming now more particularly to the detailed description of the drawings, the reference numeral 1 designates the body of the bearing itself, having a flange or plate by which it is secured to the hull in a manner

not necessary to illustrate or describe, and the interior of the body is provided with an axial hole or bore 3 which is of a size to in- 55 close the shaft S and is preferably also provided with longitudinal grooves 4 whereof the uppermost communicates with a grease inlet 5 which it will be understood extends upward to the interior of the hull and is adapted to receive a grease cup or other device for forcing lubricant thereinto. When this lubricant gets into the grooves it flows longitudinally therein and lubricates the shaft, and the rotation of the latter carries 65 it around the same so that the shaft is thoroughly lubricated on all sides. The body 1 is formed interiorly with about five longitudinal and radially disposed chambers 6 each having parallel side walls as best seen in Fig. 3 and having its outer wall 7 70 diverging from the bore 3 of the body 1 toward the rear end of the latter as best seen in Fig. 2; and within these chambers or channels 6 are disposed wear plates of 75 Babbitt metal or other similar material employed usually in the interior of bearings, here indicated as at 8, their bodies being preferably rectangular in cross section and their length being greater than that of the 80 body 1 so that their rear ends 9 extend beyond the same as seen in Fig. 2.

The exterior of the body 1 is threaded as at 10 at its rear end, and screwed thereon is a collar 11 having a wrench hold 12 around 85 it and having its rear end 13 reduced and pierced with a hole 14 of a size to loosely embrace the shaft S; and the rear extremities of the Babbitt metal members 8 bear against the interior of the rear end 13 of this 90 collar. It follows therefore that when the latter is set up upon the body by turning it around the same, the soft metal members 8 will be pushed forward into the channels 6 which grow shallower toward their forward 95 ends, and hence said members will be forced a little inward toward the shaft S and will take up the wear that has occurred on their active or innermost faces. Later a set nut 15 on the threads of the body 1 may be run 100 up against the inner extremity of the collar 11 to hold the latter from becoming loose. It will be perfectly obvious that when the boat is run out onto the ways this adjustment can be effected very quickly and with- 105

out taking the parts of the bearing apart, and it can also be done without removing the shaft or interrupting the connection with the engine, and even the propeller need
5 not be loosened or disconnected therefrom.

As this entire bearing is under water, it becomes necessary to provide means for preventing the same from leaking inward through the bearing and into the interior of
10 the boat. If the bearing is extremely tight this may not occur, but in almost every bearing that has been used a little time a certain amount of looseness results and the water does leak in. In order to avoid this, I
15 may provide an extension 22 projecting from the rear end 13 of the collar 11 around the hole 14 and externally threaded, and onto this extension I screw a gland nut 21, preferably employing packing rings 24
20 within it and which are compressed against the extremity of the extension 22 when the nut is screwed up tight; and if desired a set nut 23 can be screwed onto the extension 22 against the inner end of the gland nut 21
25 so as to prevent the latter from becoming loose. It is not the intention to lubricate this device, as it is provided almost solely to prevent leakage of water into and through the bearing, but it should not be set up so
30 tightly that unnecessary friction will result, the weight of the shaft and propeller being supported by the main bearing and the wear occurring mostly on the Babbitt metal members 8 which from time to time are set up in
35 the manner described.

It will be noted that the channels 6 extend throughout the length of the body whereas the grooves 4 terminate short of the ends of the body thereby forming lubricant
40 pockets and at the same time providing abutments at the ends of the body between the channels 6 to steady the shaft. The oil in being fed to the upper groove 4 works its way into the various lubricant pockets and

thus lubricates the shaft and the wear compensating members 8.

What is claimed as new is:—

1. A propeller shaft bearing comprising a tubular body provided with a series of internal longitudinal grooves and channels, 50 the channels extending throughout the length of the body and increasing in depth toward the rear end of the body and being rectangular in cross section, and the grooves terminating short of the ends of the body to 55 form lubricant pockets, the body also having an inlet communicating with one of the said pockets, tapered wear compensating members fitting in the said channels and extending beyond the rear end of the body, a cup 60 shaped member screw threaded onto the rear end of the body to force the said wear compensating members inwardly and having a rearwardly projecting extension through which the shaft is adapted to pass, and a 65 gland nut screwed upon the extension and adapted to receive packing.

2. A propeller shaft bearing comprising a tubular body provided with a series of internal longitudinal lubricant pockets and 70 channels, the channels increasing in depth toward the rear end of the body, tapered wear compensating members fitting in the said channels and extending beyond the rear end of the body, a cup shaped member engaged upon the rear end of the body to force 75 the wear compensating members inwardly and having a rearwardly projecting extension through which the shaft is adapted to pass, and a gland nut screwed upon the extension and adapted to receive packing. 80

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ELVIN Y. LELAND.

Witnesses:

LOUIS B. PERRY,
A. H. LYNAM.