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SHAFT LOG AND STUFFING BOX STRUCTURE

Filed Nov. 29, 1930

Fig. 1.

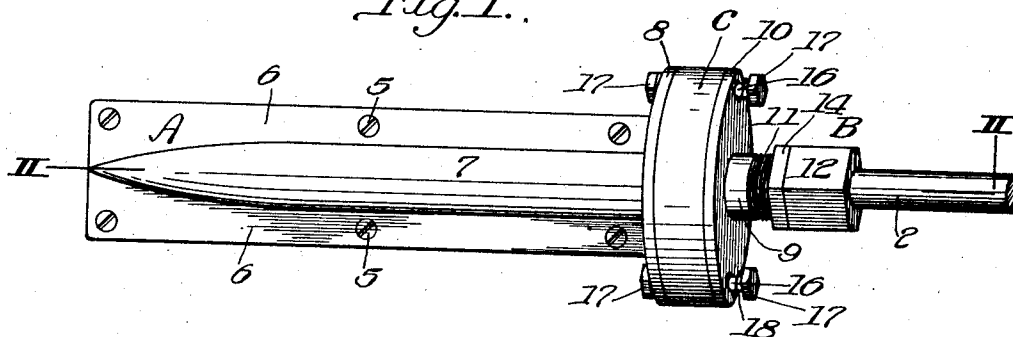


Fig. 2.

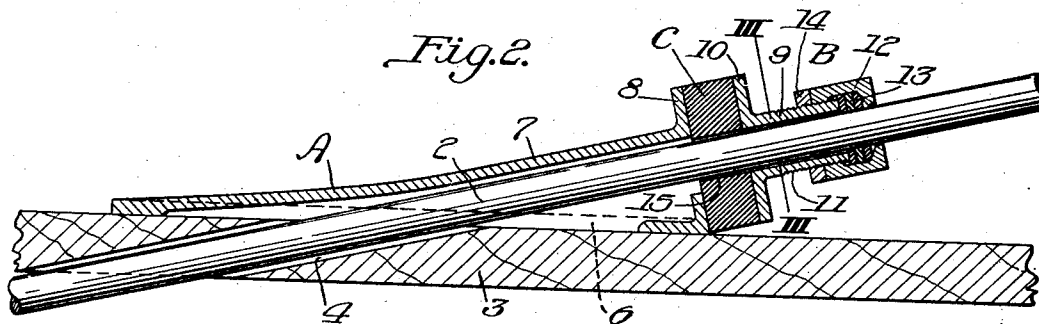


Fig. 3.

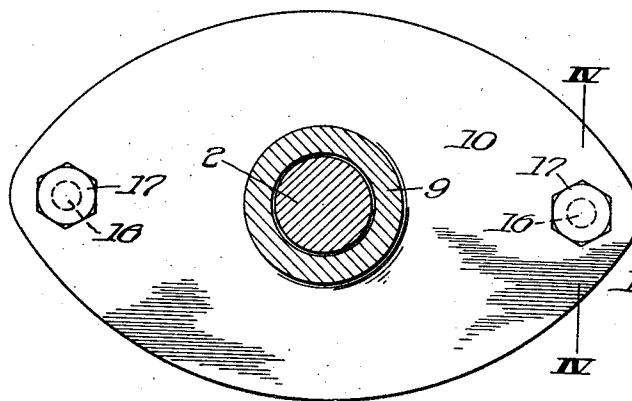
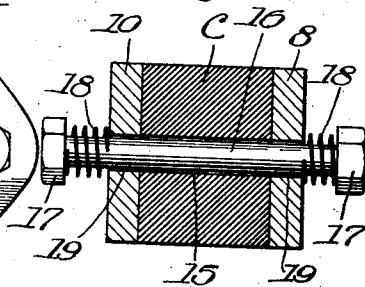


Fig. 4.



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SHAFT-LOG AND STUFFING-BOX STRUCTURE

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My invention relates to improvements in a shaft-log and stuffing-box construction for motor boats and the like and is more particularly directed to a combined self-aligning shaft-log and stuffing-box structure.

Shaft-logs have been utilized heretofore for encasing the propeller shafts of water craft, and packing glands or stuffing-boxes have been employed in connection therewith.

However, in prior constructions no simple provision has been made for variations in shaft alinement, for example, such variations as might occur by removal and replacement of the motor and from other causes.

Among the objects of my invention are, to provide a simple and efficient shaft-log and stuffing-box structure embodying automatically operable means for aligning the motor shaft associated therewith; to provide a device of the character stated embodying resilient means interposed between an end of the shaft-log and the stuffing-box; and to provide yielding means for connecting the shaft-log member and the stuffing-box.

My invention may be readily understood from the following description taken in connection with the accompanying drawing, which illustrates a preferred embodiment, and wherein:

Fig. 1 is a top plan view of a shaft-log and stuffing-box device constructed in accordance with my invention;

Fig. 2, a longitudinal section taken on the line II—II of Fig. 1;

Fig. 3, an enlarged part elevational view and a part sectional view, the section being taken on line III—III of Fig. 2;

Fig. 4, a detail sectional view taken on the line IV—IV of Fig. 3.

Referring to the drawing, 2 designates the propeller shaft of a motor boat or other vehicle, which is coupled with a motor (not shown) and extends downwardly and rearwardly through the keel or bottom 3 of the boat in an inclined relation, an opening 4 being formed in said keel for that purpose. To seal the opening 4, the shaft 2 is passed through a shaft-log or shaft-log casing A, the latter being fixedly secured to the keel 3 over said opening, as by means of bolts or

screws 5 passed through laterally extending securing flanges 6, constituting portions of the shaft-log structure.

The shaft-log includes a hollow body portion 7, adapted to receive the propeller shaft 2. The body 7 is U-shaped in cross section and open at the bottom between the lateral flanges 6. The forward upper end of the casing is formed with an integral outwardly projecting means or flange 8, adapted to be disposed in a plane at right angles to the axis of the propeller shaft 2.

Spaced forwardly of the flange 8 of casing A is a stuffing-box B. Stuffing-box B comprises a hollow sleeve having a right angle flange 10 integral therewith and an externally threaded portion 11 adapted to receive a hollow threaded gland unit or stuffing-box nut 12. Gland 12 carries suitable packing 13 adapted to be compressed against the shaft 2 and the end of the sleeve 9, to effect sealing in the usual manner. 14 designates a lock-nut mounted on the sleeve 9.

Positioned between the members or flanges 8 and 10, I provide a resilient block or aligning member C, this member being preferably formed of rubber or other suitable resilient material, and having a central opening 15 therethrough, through which the shaft 2 is adapted to be passed. The respective end faces of the member C and the flanges 8 and 10 are in contact, said member and flanges being substantially oval in configuration, whereby they extend laterally to receive retaining members or bolts 16 passed through suitable aligned openings therein.

Members 16 are provided with adjustable abutments or nuts 17, and are of sufficient length to extend at each end beyond the respective flanges 8 and 10. Suitable springs 18 are positioned on each of said retaining members between the abutments thereof and the flanges 8 and 10. In this manner, the stuffing-box or packing gland B is secured to the shaft-log A, permitting an angular displacement of the shaft with respect to the shaft-log and the resilient member C is clamped in sealing relation with and between the flanges 8 and 10.

From the foregoing, it will be seen that

the shaft-log A may be positioned on the keel of the boat, and that the stuffing-box B and the interposed yielding member C may be readily assembled. Should there be a slight variation in the alignment of the shaft-log with the axis of the shaft 2, such variation will be automatically compensated for by means of the resilient member C and the spring-pressed retaining members 16 which permit an angular displacement of the stuffing-box B, with respect to the shaft-log A. So, also, should the motor be removed and replaced; any slight variation in the alignment thereof will be taken up in the shaft-log. The bolt openings 19 in the flanges 8 and 10 may be increased in size to permit of a greater range of angular misalignment.

Various additions and modifications are contemplated, provided they fall within the scope of the following claims.

I claim:

1. In a device of the character described, a shaft-log member, a stuffing-box, resilient means interposed between the shaft-log member and the stuffing-box, and yielding means connecting the aforesaid member and stuffing-box and clamping said resilient means in sealing relation with said member and stuffing box.

2. In a device of the character described, a shaft-log member, a stuffing-box, resilient means interposed between the shaft-log member and the stuffing-box, and means connecting the aforesaid member and stuffing-box, said connecting means including a member having abutments thereon and a spring interposed between the shaft-log member and an abutment and a spring interposed between the stuffing-box and an abutment.

3. In a device of the character described, the combination with a shaft-log member having a hollow body for the reception of a shaft and having a flanged end portion, of a stuffing-box member having a flanged end portion associated with the shaft-log member, resilient means interposed between said flanged end portions for permitting angular displacement of one of said members relative to the other, and yielding means connecting the flanges of the respective flanged ends and clamping the resilient means between said ends.

4. In a device of the character described, the combination with a shaft-log member having a hollow body for the reception of a shaft, a projecting end element carried by the shaft-log member, of a stuffing-box member, a projecting end element carried by the stuffing-box, resilient means interposed between the said elements, members having abutments thereon for connecting said end elements, and springs interposed between an abutment and the respective end elements

for permitting angular displacement of one of said members relative to the other.

5. The combination of a shaft-log having a flanged inner end, a stuffing-box having a coordinate flange, and means for yieldingly connecting the stuffing-box to the shaft-log to permit lateral movements of the stuffing-box said means comprising a perforate resilient block interposed between said flanges, and bolts connecting said flanges.

6. The combination of a shaft-log having a flanged inner end, a stuffing-box having a coordinate flange, and means for yieldingly connecting the stuffing-box to the shaft-log to permit lateral movements of the stuffing box said means comprising a perforate resilient block interposed between said flanges, and connecting bolts traversing registering holes in the flanges and the resilient block.

In testimony whereof I affix my signature.

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