

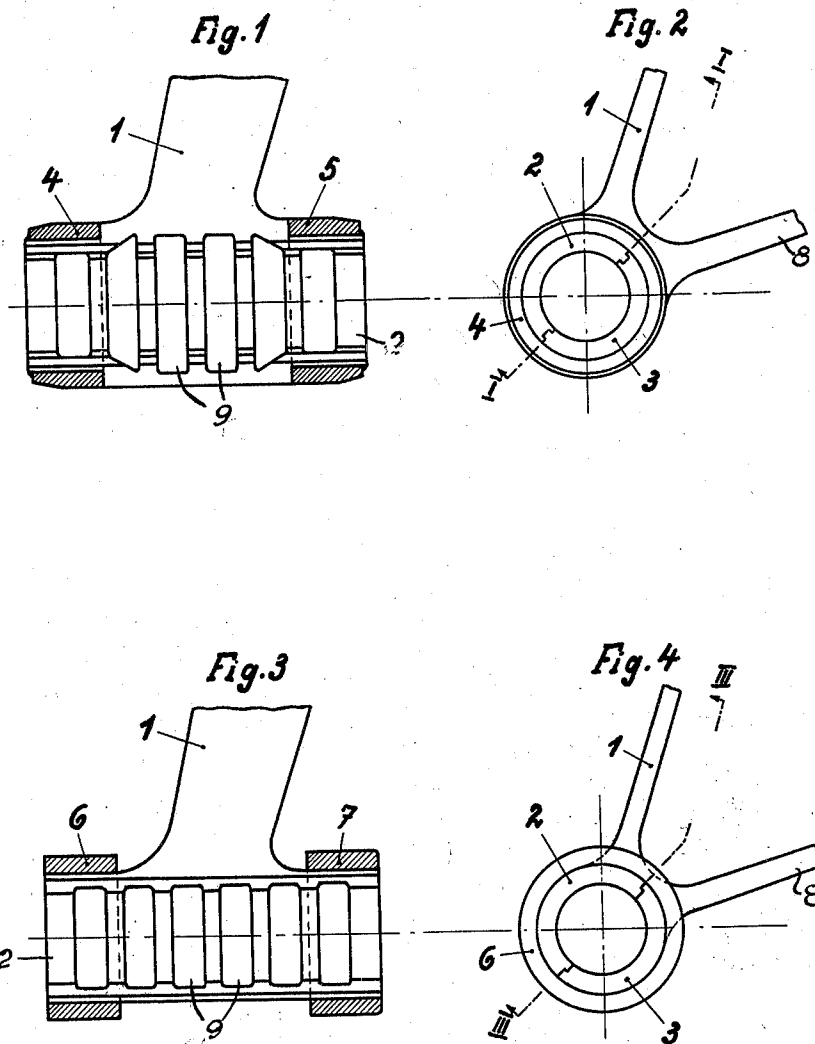
May 2, 1939.

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2,156,848

BEARING BLOCK OR PEDESTAL FOR MARINE VESSELS

Filed Nov. 3, 1936



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## UNITED STATES PATENT OFFICE

2,156,848

BEARING BLOCK OR PEDESTAL FOR  
MARINE VESSELS

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Application November 3, 1936, Serial No. 109,056  
In Germany January 11, 1936

## 1 Claim. (Cl. 308—22)

The production of pedestals or bearing blocks for marine vessels especially those of large dimensions, by forging is one of the most difficult problems of the forging expert as two supporting arms considerably hinder the production and, owing to the extremely irregular distribution of the material, differences in temperature and consequently stresses occur in different parts of the workpiece during the heating or cooling thereof, which often result in the unavoidable formation of cracks or distortions. Therefore, when forging bearing blocks, a considerable amount of extra work is necessary to eliminate the distortions, for which work the workpiece must often be heated to forging temperature and re-worked twenty times and more. At each re-heating unforeseen and uncontrollable bendings can occur which may often entirely or partly destroy the preceding forging work. Besides these difficulties which in themselves are not easy to master and which often result in the workpiece becoming useless during the production, there is also, when these difficulties have been overcome, the more serious danger of the structure of the material of the workpiece undergoing detrimental changes and therefore becoming inferior in quality whilst being worked, due to the numerous heating operations which are necessary. Even high-grade alloyed materials are subjected to this danger. Workpieces, the material of which have undergone such detrimental structural changes, which can scarcely be detected on the undamaged workpiece, are often incapable of withstanding the stressing to which they are subjected in practice and become apparent only by the sudden appearance of serious fractures which lead to stopping of the engine with all the resultant consequences.

These defects can be avoided according to the invention if the forged steel bearing blocks with supporting arms forged thereon are made in two parts each having one arm, and being interconnected by suitable means, the joint of these two parts lying in a plane extending through the axis of the hub. Consequently, the bearing blocks consist of two parts with an arm on each. Rings shrunk on the ends of the hub have been found to be particularly suitable as means for interconnecting the two parts. The production of these bearing blocks in two parts presents considerable advantages and facilities in the production both in making the rough forging and in finishing. The parts each provided with only an arm can be shaped, deformed or forged in a simple manner whereas in the case of a one-piece bearing block the two arms hinder and render difficult the shaping. The main advantage is,

however, the elimination of the dangerous spreading and bending work, which is necessary when forging one-piece bearing blocks. Each arm piece can be finally shaped in a press with a few heatings, as all parts can be subjected without hindrance to the action of the press and of straightening tools on the entire length of the arm, so that subsequent bending work is unnecessary. Thus, the extremely detrimental changes in structure are avoided. Experiments have shown that particularly bearing blocks the parts of which are connected by rings shrunk on to the hub, are perfect constructional elements which can be produced with much less work and expense and with better material properties than bearing blocks made in one piece.

Two embodiments of the invention are illustrated by way of example in the accompanying drawing, in which:

Fig. 1 shows in elevation a section through the joint I—I in Fig. 2.

Fig. 2 is an end view of Fig. 1.

Fig. 3 shows a modified form of construction in longitudinal section on line III—III of Fig. 4.

Fig. 4 is an end view of Fig. 3.

According to Figs. 1 and 2 the pedestal or bearing block 1 is composed of two parts 2 and 3 which are connected. In order to prevent excessive friction between bearing and shaft owing to the length of the bearing, the latter is provided with ring-shaped or annular recesses 9 so that the bearing surface has interruptions or breaks. The shrunk rings 4, 5 are slipped into recesses turned in the ends of the hub so that their peripheral surfaces merge into that of the hub. The shrunk rings are therefore scarcely visible on the finished workpiece. Fig. 2 shows that each part has a narrow tongue engaging in a corresponding groove in the other part.

The construction illustrated in Figs. 3 and 4 differs from that shown in Figs. 1 and 2 in that the shrunk rings 6, 7 are not placed in recesses like the rings 4 and 5, but project above the peripheral surface of the hub.

The arm 1 is integral with part 2 and the arm 8 is integral with part 3.

I claim:

Bearing block, to be used on marine vessels, of forged steel with arms forged thereon, characterized in that it is composed of two parts each provided with one arm, the joint of these parts being situated in a plane extending through the axis of the hub of the bearing block, the two parts being united by rings shrunk on the ends of the hubs.

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