Aug. 13, 1935. J. B. HIORTH 2,011,175

RUDDER MECHANISM

Filed June 14, 1932

Fig. 1

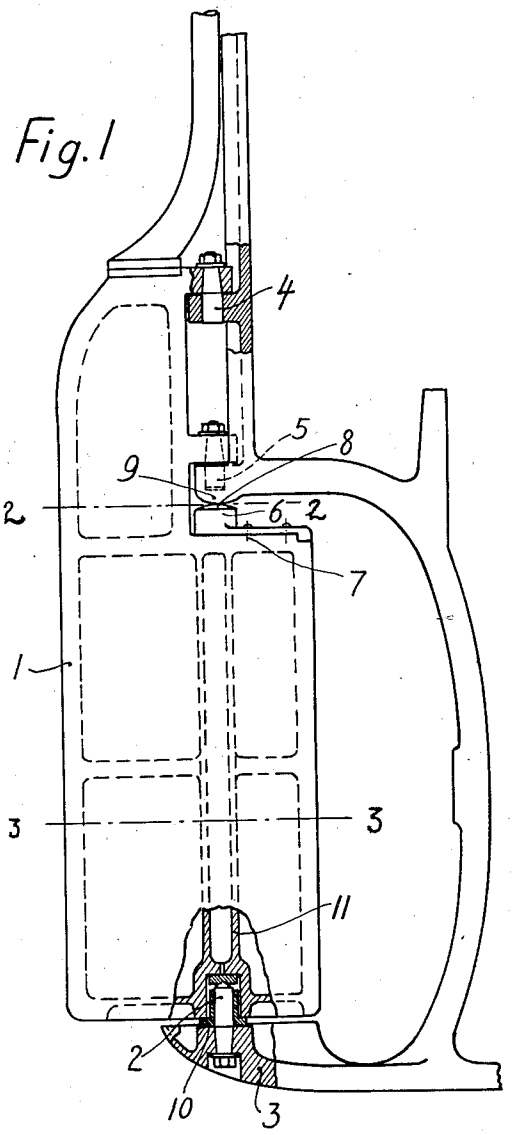


Fig. 2

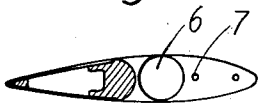
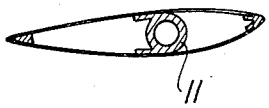


Fig. 3



Inventor:
Jens Brodersen Hiorth.
By Riddle, Margeson and Hornidge
Attorneys.

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RUDDER MECHANISM

Jens Brodersen Hiorth, Hovik, near Oslo, Norway

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5 Claims. (Cl. 114—162)

In the usual type of balanced or semi-balanced rudders, mounted on pintles in the upper part of the rudder and contingently in a sole piece, there will always be the danger that the pintles, if the vessel should take the ground, when it is being docked, or in some other way subjected to strong forces at the stern part may be destroyed or deformed so that the rudder will get jammed. The subject matter of the present invention is an arrangement by means of which the aforesaid danger is avoided or substantially reduced.

According to the invention the rudder is so constructed and arranged that a stroke or other strain on the lower edge of the rudder or on the sole piece cannot be transferred to the rudder pintles or gudgeons and deform the same, but will be transferred through the sufficiently strongly built rudder directly to the upper part of the rudder post, this being shaped in a suitable manner so as to form a rudder stopper against which the upper edge of the rudder or its balanced part will abut. In order to enable the rudder to be sufficiently raised for mounting and dismounting there is, on the upper edge of the rudder or its balanced part, or on the upper part of the rudder post, arranged a removable pad or stopper piece with a height or thickness a little greater than the length of the pintles. The face of the faying part of the rudder or of the rudder post, or of both, is preferably made somewhat spherical in order to reduce the friction. In order to make certain that forces thrown upon a rudder pivoted in a sole piece are being transferred through the rudder itself and not through the lower pivot, there are preferably between the sole piece and the lower edge of the rudder arranged one or more rings or washers filling out the space between them without, however, supporting the rudder. Out of consideration to ease of mounting these rings or washers are preferably made in two parts.

The drawing illustrates an example of an embodiment of the invention used for a semi-balanced rudder mounted on pintles in the upper part of the rudder and in a sole piece.

Fig. 1 is a side elevation partially in section, Figs. 2 and 3 cross-sections on the lines 2—2, respectively 3—3 in Fig. 1.

The rudder 1 is mounted on the pivot 2 in the sole piece 3 and has pintles 4 and 5 in the upper part of the rudder post. On the upper edge of the balanced part of the rudder is arranged a stopper piece 6, which is removably fastened by means of screws 7 and provided with a spherical pressure-piece 8 facing a corresponding part 9 on the rudder post. Between the sole piece 3 and the lower edge of the rudder there is arranged a ring 10 exactly filling out the space between rudder and sole piece, so that a force on the sole piece will be transferred through the rudder body to the upper rudder stop.

The rudder is constructed with a strong central, preferably hollow cast stock 11 for transferring of the forces to the rudder stop.

What I claim is:

1. In a rudder post and rudder structure, pintles for mounting the rudder stucture on the upper part of the rudder post, and abutments carried by the rudder and the rudder post between the upper edge of the rudder and part of the rudder post above the same, one of the said abutments being removable and having a height at least equal to the length of the pintles, said abutments being in the center line of the pintles for transferring through the rudder to the rudder post a force acting upwardly on the lower edge of the rudder.

2. In a rudder post and rudder structure, pintles for mounting the rudder structure on the upper part of the rudder post, and abutments carried by the rudder and the rudder post between the upper edge of the rudder and part of the rudder post above the same, one of the said abutments being removable and having a height at least equal to the length of the pintles, said abutments being in the center line of the pintles, at least one of the abuments being spherical.

3. In a rudder post and rudder structure, pintles for mounting the rudder, said pintles being fastened to the rudder, and abutments, one of which is removably attached to the upper edge of the rudder between said edge and the part of the rudder post above the same and located in the center line of the pintles.

4. In a rudder post and rudder structure, pintles for mounting the rudder structure on the upper part of the rudder post, said rudder post being formed with a sole piece having a pintle thereon, an abutment or stop between the upper edge of the rudder and the part of the rudder post above the same and located in the center line of the pintles, and a filling member concentric with the center line of the pintles between the lower edge of the rudder and the sole piece.

5. In a rudder post and rudder structure, pintles for mounting the rudder structure on the upper part of the rudder post, abutments or stops carried by the rudder and the rudder post between the upper edge of the rudder and part of the rudder post above the same, one of the said abutments being removable and having a height at least equal to the length of the pintles, said abutments being in the center line of the pintles, the rudder being constructed with a continuous rudder stock in the center line of the pintles and extending from the lower edge of the rudder to the upper edge of the same.

JENS B. HIORTH.