



Auxiliary propulsion for seagoing ships Hamburg, 07.09.94

The invention relates to auxiliary propulsion for seagoing ships, a diesel engine, as the main engine, driving a propeller via a shaft system.

In the conversion of ships and/or during a change in the operational requirements, there is the problem of increasing the speed with the existing propulsion system. It has been found here that, by constructional variation in the hydrodynamic properties of forebody and afterbody and by shortening the ship to save power, the specified aim cannot always be achieved or in the case of container ships the capacity is considerably impaired. Since the existing main engine cannot be exchanged for a larger engine for reasons of space and on account of the costs thereby incurred, the economically justifiable constructional arrangements are considered to be the limits of what is possible.

The object of the invention is to create auxiliary propulsion for increasing the propulsive power, which auxiliary propulsion guarantees retrofitting for existing propulsion systems and permits subsequent installation.

This object is achieved according to the invention in that a diesel engine which can be retrofitted and has a generator for driving an electric motor is arranged and that the electric motor can be coupled via gearing having an elastic coupling and a hydraulic clutch to the shaft system for increasing the propulsive power of the main engine.

In this way, it is possible to carry out desired retrofitting and to provide the diesel engine necessary for the electrical power generation and having the generator it need be in a new engine room at a distance from the existing main engine.

To effectively couple a non-uniform torque of the existing main engine and the uniform torque of the new electric motor, provision is made for the diesel engine as the main engine and the electric motor and the power-generating system to be coupled to one another and to be

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adjustable via a control unit.

A favourable configuration consists in the fact that the electric motor, with gearing and clutch, can be connected via an elastic coupling to the shaft system at the flywheel of the diesel engine as the main engine.

An exemplary embodiment of the invention is schematically shown in the drawings, in which:

Fig. 1 shows a shaft system with allocated propulsion units, and

Fig. 2 shows a block diagram of a complete arrangement.

In the arrangement shown, a diesel engine 1 is coupled as the main propulsion engine to a shaft system 2 for driving a propeller 3. Arranged as auxiliary propulsion is a further diesel engine 4 having a coupled generator 5 which is connected via a line connection 6 to an electric motor 7. Via gearing 8, a clutch 9 and an elastic coupling 10, the electric motor acts on the shaft system 2 parallel to the diesel engine 1 as the main propulsion engine. To take into account the different torque characteristics of diesel engine 1 and electric motor 7 and diesel engine 4, the two propulsion units and the power-generating system 4 and 5 are coupled via a control unit 11 which via an allocated computer has recourse to appropriate programs. In this way, it is possible to arrange a propulsion unit which can be retrofitted, having essential parts, diesel engine 4 and generator 5, at a distance from the diesel engine 1 as the main engine and to apply it as auxiliary power to the shaft system 2 via an electric motor 7.

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Patent Claims

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1. Auxiliary propulsion for seagoing ship, a diesel engine, as main engine, driving a propeller via a shaft system, characterized in that a diesel engine (4) which can be retrofitted and has a generator (5) for driving an electric motor (7) can be coupled via gearing (8) having an elastic coupling (10) and a clutch (9) to the shaft system (2) for increasing the propulsive power of the main engine.
2. Auxiliary propulsion according to Claim 1, characterized in that the diesel engine (1) as main engine and the electric motor (7) and the power-generating system (4) and (5) are coupled to one another and are adjustable via a control unit (11).
3. Auxiliary propulsion according to Claim 1 or 2, characterized in that the electric motor (7), with gearing (8) having an elastic coupling (10) and clutch (9), can be connected to the shaft system (2) at the flywheel of the diesel engine (1) as main engine.

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